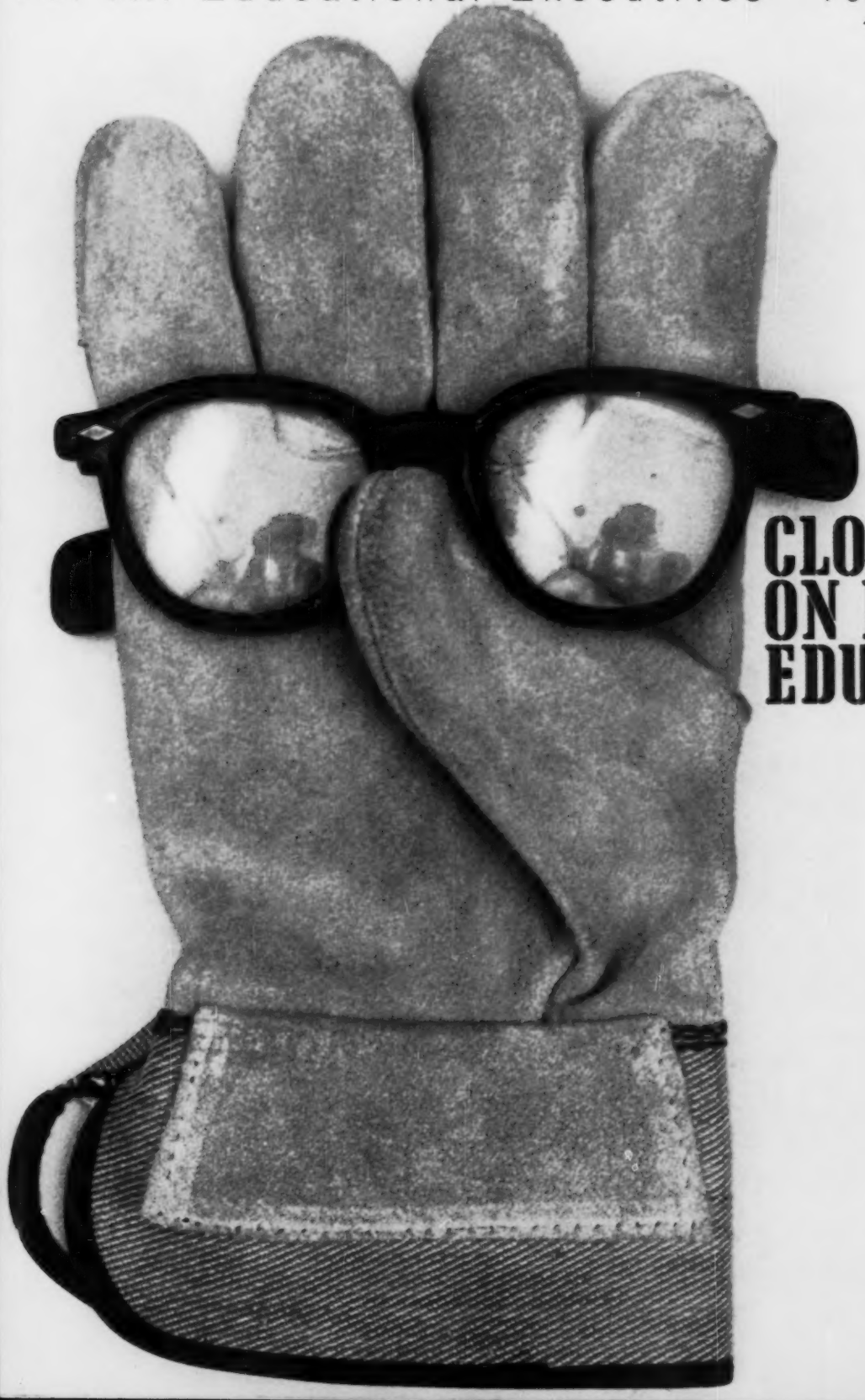
OVERVIEW

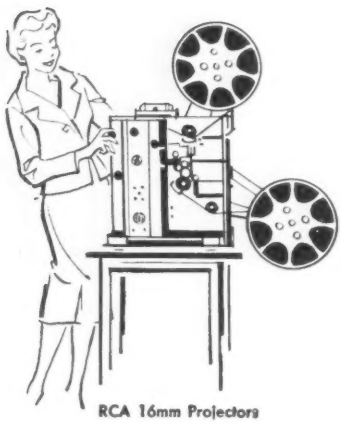
For All Educational Executives February 1961

A BUTTENHEIM PUBLICATION



CLOSEUP ON LABOR EDUCATION

RCA EDUCATIONAL ELECTRONIC TOOLS



RCA 16mm Projectors

RCA Modular Sound Systems

RCA Record Players
and Tape Recorders

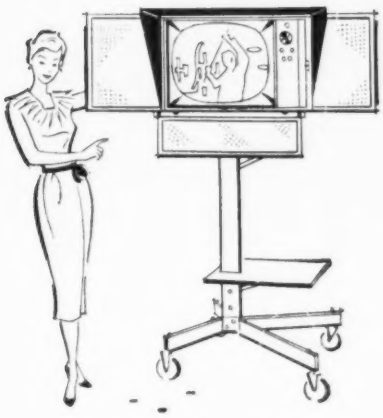
GET MORE LONG RANGE VALUE FROM YOUR DOLLARS WITH RCA ELECTRONIC TOOLS FOR EDUCATION

Today, in spite of acutely rising prices, RCA Electronic Tools for Education offer greater value to schools than ever before. Because of a dynamic research program which has led to constant improvement in reliability and performance and because of their ability to meet the crucial demand of better education for more students, these products represent one of the best buys in the educational marketplace. They are an investment which will give dividends in continued service for years to come. Here briefly are some of the things you get for your money when you buy RCA.

In terms of function you are getting equipment which has been fashioned to help teachers teach *more* students *better*. Equipment which can bring a mountain of illustrative material—indeed any facet of world culture which has been recorded on film, tape or disc—into the classroom at the flick of a switch. Equipment which enables the teacher to devote more time to individual students, and which helps students to learn faster and retain more. Equipment which reduces the drudgery of drill for the teacher and which stimulates him to more creative effort in the classroom.

Circle **OV-101** on reply card, last page

FOR "ACROSS—THE—ROSTER" USE



RCA Educational TV Receivers

RCA Teaching Devices—Language Laboratories and Electronic Trainers

In terms of product you are getting quality equipment from a company which is no electronics-come-lately in the educational field. RCA has been making 16 mm sound projectors for thirty years, and school sound systems for more years than that. This experience is reflected in an extensive line of products which provide dependable performance.

RCA's long association with the educational market has resulted in products specifically designed to meet this market's unique needs. For example, every product in the line features ease of operation and ruggedness of construction. With RCA Electronic Tools for Education you get equipment whose simplicity encourages use; equipment which will withstand the onslaughts of even the most spirited students, and which will give you on-schedule performance in class after class.

The modular construction of both language laboratory equipment and sound systems is another evidence of RCA's thoughtful design. These products were engineered for growing schools. You buy to meet your present needs only; expand when you need to. But, like the extra length in junior's trousers, the expansion is planned for. Thoughtful design permits the installation of additional equipment in short time and at a low cost.

Because of the dynamic nature of the electronics business, you get important value in research, too. RCA's intensive research programs in the broad areas of defense, consumer and industrial electronics result in a stream of remarkable discoveries, many of which have direct application in the educational field. From this sharing of research comes a constant series of innovations for product improvement at a quite low cost.

Looked at from any angle, RCA Electronic Tools for Education are an outstanding buy. They represent a uniquely low cost-per-student investment for a group of products whose value to education stands second only to the teachers they serve.

For more information, write RCA, Educational Electronic Audio Products, Bldg. 15-1, Camden, N. J.

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The Most Trusted Name in Electronics

RADIO CORPORATION OF AMERICA

SPECIFY

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V.O.S. Leather Look Gym Seating Stays First-Day New With Practically No Maintenance!

No costly refinishing . . . no costly repairs . . . no costly replacements—V.O.S. Leather Look Seating is made to insure the absolute minimum in upkeep time and dollars. Vinyl seating can be *cleaned with ordinary detergents* . . . (and even this is rarely required in normal use) . . . unlike wood which requires extensive refinishing, V.O.S. *need never be refinished* . . .

For More Information Write: BRUNSWICK CORPORATION, SCHOOL EQUIPMENT DIVISION, KALAMAZOO, MICHIGAN

Circle **OV-104** on reply card, last page

FOLDING GYM SEATING WITH THE LEATHER LOOK

Brunswick

Totally New Vinyl-On-Steel Gym Seating Design Guarantees

A Lifetime of Comfortable, Maintenance-Free Service!

Imagine! Gym Seating with all the warmth, texture and color of leather *plus* the inherent strength and durability of steel! That's V.O.S. by Brunswick. A lifetime single surface of Vinyl on Steel that realizes the ultimate in gym seating service. Styled for a new kind of gym beauty . . . designed for comfort! And available *now!*

V.O.S. IS STRONG . . . SAFE

The perfect gym seating material . . . heavy gauge steel won't bend, buckle or sway under the heaviest loads. Permits use of steel-to-steel understructure connections which, unlike wood, never weaken and never loosen.

V.O.S. CAN TAKE IT . . .

Resists abrasion, scuffing, scratches like nothing ever did! Special vinyl formula "springs" back, retains its finish and Leather Look through the years. Never splints or chips—won't snag stockings, trousers, skirts.

V.O.S. REDUCES NOISE . . .

An important bonus! Leather Look vinyl coating helps absorb and deaden gymnasium noises while gym is being used for spectator games or for regular gym classes.

V.O.S. IS TEMPERATURE-PROOF . . . STAIN-PROOF . . . BURN RESISTANT

Heat, cold . . . wet air, dry air . . . V.O.S. is unaffected! Dirt, grease, most food stains come off easily, with ordinary detergents.

OVERVIEW

For All Educational Executives

A Buttenheim Publication

Two Signs of Progress . . .

. . . may be noted as the second issue of OVERVIEW's second year heads for the printing press:

1) *Reader response*—an increase of over 30 percent during 1960 in letters to the editor and in the number of readers requesting manufacturers' literature or printed matter via the reply cards bound in every issue.
2) *Advertiser acceptance*—thirteen new advertisers launching campaigns right in this issue.

We firmly believe these gains in reader responsiveness and advertising acceptance stem from OVERVIEW's unique editorial fare typified by this month's "Close-up on Labor Education" (page 50), an eye-opening description of a little noted but fast-growing segment of the total quest for learning. Our editors also predict high reader interest in the major article on page 55, which tells how a TV center was designed to produce the best quality of television for education in New York City.

There are 5,578 readers of OVERVIEW at present in the eleven western states with whom we hope to visit during the first of the American Association of School Administrators' regional conventions in San Francisco starting February 25. Please stop in to see us at our Booth #1-19 at Brooks Hall, Civic Center. Editor Arch Shaw and I will hope to greet you and to learn from you how OVERVIEW can achieve a still higher priority rating for the reading time of all educational executives.

Donald V. Buttenheim
Publisher

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Circle **OV-105** on reply card, last page

Stars of 1960 **SINGER** Young Stylemaker Contest

Top thrills of sewing! These Grand Winners outsewed 60,000 girls in the 1960 Young Stylemaker Contest. They were among 5000 who won prizes including sewing cases and SINGER* Sewing Machines.

The 15 top regional winners (five from each Division) traveled to New York for an expense-paid round of sight-seeing, plays and judging—for which they modeled their own creations.

Start planning now for a 1961 winner from your school! Use these success stories to encourage your students to enter the 1961 Contest . . . open to girls 10 to 21 who enroll in the SINGER Contest Dressmaking Course. There'll be thousands of winners . . . *no losers!* Everybody improves sewing skills, and has fun making a dress, suit or other wearable. Watch for contest rules to be published soon.

Misses and Mrs. Division Winner, Mary Jane Diehl of Canfield, Ohio, now a college freshman, won $1000 and a trip for two to Paris couture houses. She used Vogue Pattern #5029 for her brown and white wool herringbone suit.

Teen Winner—15-year-old Texas belle, Cheryl Ann Little of San Antonio won United States Tour and $600 with this black and white checked wool suit. Vogue #1637.

Tween Winner—Frances Wargo, 13, bright-eyed Bellaire, Texas lass, sewed up top prize of U. S. Tour and $400. She made her green wool dress from Simplicity Pattern #3541.

SINGER SEWING CENTERS

Listed in your phone book under SINGER SEWING MACHINE CO.

*A Trademark of THE SINGER MANUFACTURING CO.

8 ways to enrich school curricula and improve administration

...through an economical sound-communication system

The console shown here is the central control of an Executone sound-communication system for an average-sized K-8 or secondary school. Located in the General Office, it handles switching, programming, transmission and power amplification for all the services described below—and others that your special requirements may suggest. Its 5-channel capacity eliminates the need for more than a single conduit for signals or communication between any two points in the system. Identical functions are available in a vertical console, for use where office space is at a premium.

Supplement the teaching program with sound

Classroom audio-aids can give students access to sources of important teaching materials . . . can place each class in closer relation to the school and the world around it . . . can help develop each pupil's critical faculties. Leading educators value the availability of:

Radio broadcasts: speeches; music; coverage of special events; interviews; important dramatic presentations; sessions of Congress; etc.

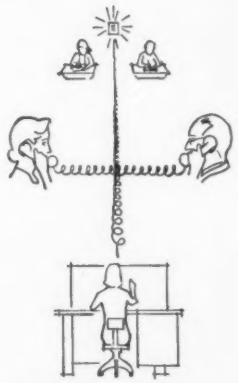
Recordings: from an ever-increasing fund of educational material on tape and discs.

Transmissions from other parts of the school: student musical programs; sports events; etc.

Recording and play-back facilities: for classes in choral and instrumental music; language and speech courses; drama workshops; etc.

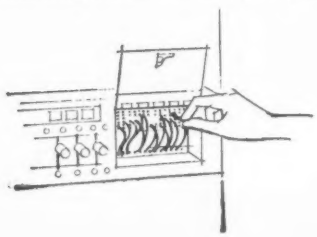
All these audio-aids can be supplied by a single Executone classroom reproducer . . . the same instrument that handles time signal, alarm and intercom functions. With a standard Executone system, any combination of rooms—chosen by selector-switches—can receive either of two simultaneous sound transmissions. Reproduction is of unusually high quality. Where recording and play-back are desired, rooms need only be supplied with microphone and tape-deck jacks. Amplification takes place at the main control console.

Speed administrative action: relieve over-burdened staff



Freedom to teach—and to work more productively—is one of the best answers to the chronic shortage of teachers and administrative personnel. Time savings increase in direct proportion to the staff's communication capabilities. Today, these can economically include: A) 2-way electronic voice intercom . . . between the office and any classroom . . . with complete privacy safeguards. B) Private-line room-to-office and room-to-room intercom . . . with call origination from any point. The Executone system offers all the above, providing 2-way remote-reply intercom through each classroom speaker . . . optional private-line handset communication using an independent channel carried by the same wiring.

Save money & space in providing variable time programs



Classes with varying time requirements need no longer be subject to an inflexible set of signals. But conventional time-programming equipment—including independent crossconnect panels, relay racks, classroom buzzers and wiring systems—is bulky and expensive.

The Executone system includes a remarkably compact, easily accessible peg-board programmer—which allows each classroom to be placed on any one of six different time programs within seconds. This function is built directly into either standard console! The costly conventional system is eliminated.

Circle OV-106 on reply card, last page

Preserve student discipline during unsupervised intervals

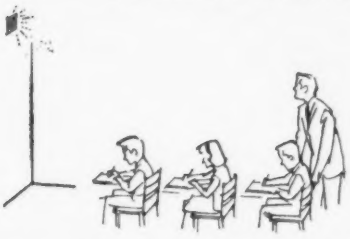
When teachers must leave their classes, the maintenance of discipline usually depends on the presence of a substitute. Faculty members may now be relieved of this non-productive extra duty. Unattended students can be monitored from the Office—through the Executone speaker—and notified by its open-line signal light that they are under remote supervision.

Control student transportation

Teachers find it especially difficult to keep order—and prevent delays—when restless students must await loadings of homeward-bound school buses. This condition is relieved when children are permitted to play freely—until summoned to the loading area in proper groups and directed to their buses.

This can be achieved through an inexpensive adjunct to the Executone system: a microphone jack at the loading area and speakers at loading and congregation areas. Both microphone and speaker wiring run in the same conduit. The amplifiers at the main console are utilized. Any available microphone can be plugged in at dismissal time.

Preserve the continuity of classroom activities



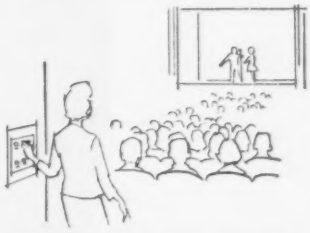
Communications in the modern school go a long way toward assuring uninterrupted class activities. But care must be taken that the facilities which make this possible are not themselves a disruptive influence. This is the case where calls make it necessary for teachers to drop what they are doing, to approach or handle equipment . . . or where a call interrupts a sound transmission.

Executone removes both of these contingencies. Through-the-speaker calls, for brief conversations, can be answered by the teacher from any point in the room—without raising her voice. And use of the optional handset channel for longer conversation prevents interference with concurrent sound programs.

Prevent confusion and panic in emergencies

Leading administrators have long felt the need for greater control of student bodies in emergencies. They seek alarm signal facilities to augment standard fire alarm systems—for such special contingencies as air raids. To control student movements in critical situations, they wish to make it possible for any staff member to broadcast voice instructions—without having been trained in the use of sound equipment.

In the Executone system, the same components used to produce time signals will also provide supplemental alarms. Executone furnishes duplicate signal generators—for fail-safe standby duty. For follow-up voice instructions, after an alarm, a staff member need only touch the 'emergency' bar at the Executone console. This overrides all other transmissions . . . allows him to speak immediately to the entire student body.



Provide quality-controlled sound for audience activities

No audience facilities are so intensively used as those in the modern school. Auditoriums and gyms serve not only during the school day—but also for adult and community activities . . . for socials and special events. Sound reinforcement equipment must be designed to high standards. And controls must be efficient. Conventional microphone mixing units—because of A-C power, ventilation and space needs can seldom be situated where they do most good.

An Executone system provides not only sound reproduction of highest quality, but also new flexibility in the location of controls. Transistorized preamplifiers and mixers are compact enough for concealment anywhere . . . have no special installation requirements.

Executone manufactures School-to-Home telephone equipment for shut-ins.

Your Local Executone Organization Offers You Six Stages Of Service

1. THOROUGH, PROFESSIONAL CONSULTATION OR SURVEY
2. DESIGN STANDARDS FOR OPTIMUM SYSTEM PERFORMANCE
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OVERVIEW

For All Educational Executives

February 1961

41 **Tomorrow's Engineer**

Engineering education must be redesigned, says George Taylor, to recognize the difference between the scientist (originator) and the engineer (applicator).

47 **Ivan Learns a Trade**

Mark Nichols and H. H. London travelled 7,000 miles inside Russia visiting schools and interviewing students and instructors; they report here how the Soviets are shaping education to help the country take the lead in world production of economic goods.

50 **Closeup on Labor Education**

From apprentices in training to top leaders within the movement, labor trains its own. This exclusive OVERVIEW survey of labor education reveals a million students in labor-sponsored classes, some conducted in shops and others on university campuses. Instruction ranges from skill improvement, to re-training for new production methods, to courses on political science and business economics.

52 **Classrooms Born of the Class Struggle**

One of the pioneers in labor education was the International Ladies' Garment Workers Union. Its education director, Gus Tyler, describes the movement that paralleled Proust and Bach with pizza and bagels.

55 **New York Builds an ETV Center**

Designer Sol Cornberg tells how he worked with the city school board to plan a million-dollar television production studio.

59 **Deadlines and Dialectic**

Education has spawned a vast publishing industry of its own. This special report tells how 2,000 educational periodicals get into print each year.

62 The School & College Living Room

Practical tips for maintaining the "decorator look" in education's new social areas.

68 Endowed Chairs for Amherst High School

A long-time plea of poet Robert Frost is realized as a high school sets up a Frost Teaching Chair for an Amherst science teacher.

76 Student Teachers in the Classroom

School administrators are the gainers, says William Bennie, when teacher trainees get practical experience in their schools.

80 Teaching via the Scientific Method

Foster Wilkinson outlines a problem-solving approach to teaching that should replace the present and inadequate common approach.

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Cover designed by Phil Franznick; photo by Mike Gilligan

LETTERS

Endorsements in Ads

Regarding your editorial in the December OVERVIEW, ["The Ethics of Endorsement"] an educator's overt product endorsement is a reflection upon his professional *propriety* rather than an ethical oversight. Other professional disciplines have taken corrective action not only within their own ranks but against any and all who would, through commercial media, reflect discredit upon their profession. Perhaps, then, it is well for educational journals to decline advertising that does not enhance *our* profession. . . .

ROBERT MAIDMENT, Principal, Newport News (Va.) High School

I am opposed to advertisements featuring personal endorsements by educators. Any administrator of public endeavor knows that good public policy legally binds a purchaser to seek out materials and equipment by careful attention to need and then to encourage competitive bidding. Endorsement of a product by a professional educator is *un*professional.

Let the educator write an article in your provocative publication encouraging use of fine equipment, but let your advertisers employ more objective means in support of their products.

JAMES N. BARLOW, Superintendent, Buildings and Grounds, West Hartford (Conn.) Public Schools

Consolidation Addenda

OVERVIEW readers may be interested in a sequel to our story on public support in Elmwood, Ohio ["Consolidation and the 8-mill Levy," January *Communications Clinic*] which told how citizens here had voted a tax increase of over 33 percent in 1958 to build the new consolidated high school.

Last summer a combined levy of 5 mills renewal and 4.5 mills new, needed to increase teachers salaries and operate the new building, was

Circle OV-107 on reply card, last page

GUIDANCE COUNSELORS

A NEW HELPING HAND FOR YOU...

IMC
instructional material centers

These IMC units are easily adaptable to all phases of guidance. Pegboard and flannelboard panels are ideal for pictorial illustration and exhibits. 8 to 10 open display shelves offer accessible displaying of books and guidance literature. Freedman Artcraft IMC units can turn any area into a complete instructional or guidance center.

NOTICE:
This unit has already been determined by many states as suitable for approval under the NDEA title V program.

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WRITE FOR IMC FOLDER AND PRICES

FREEDMAN ARTCRAFT ENGINEERING
P. O. Box 222, Charlevoix, Mich.

Letters (continued)

turned down by a public that seemed complacent with its previous accomplishment. After the school board voted a curtailed program for the current year, a group of citizens organized a house-to-house survey to line up support of the 9.5 mills. The drive netted enough signed ballots to indicate that the levy could be carried in November. The board then restored the full program. With the citizens committee leading the way, an all-out campaign was waged through school fairs, football games, car caravans, student publicity, and a house-to-house canvass. On November 8 the levy was approved.

Starting with a tax rate of 16.2 in 1957, 12.5 mills have been added, making a 77 percent increase in three years. Remarkable as this growth is, we learned one important communications fact along the way: sometimes it is necessary to take a beating so that the people will renew their interest and support their schools.

M. E. ACOCKS, Superintendent, Elmwood Local School District, Bloomdale, Ohio

"Spiritual" Cover

We would like to congratulate you for the excellent spiritual tone of the December cover of OVERVIEW and for the inclusion of the story about Nazareth.

We believe that too many of our educational publications have neglected this spiritual quality at this time of the year and have given people the idea that we, in public education, are not sufficiently conscious of our deep spiritual heritage.

J. P. MOONEY, Principal, Uniondale (N. Y.) High School

Fire Safety

Congratulations on an excellent article on school fire safety in the December issue of OVERVIEW! It should do much to post administrators on the situation and keep them reminded of their responsibilities in this field.

In the article there is a formula for flameproofing Christmas trees taken from the *College and University Safety Newsletter*. This is not the correct formula and we have written the National Safety Council to straighten them out. . . . The borax-boric acid mixture is recommended for treating textiles, including those used for decoration. However, it is of no use whatever on Christmas trees since the coating is not absorbed by the tree and as quickly as it dries it shatters and falls off.

For a considerable number of years the recommended formulas for flameproofing Christmas trees have consisted largely of a water glass base. They are specified in the NFPA pamphlet Q53-6 which discusses the question of Christmas tree fire hazards in some detail. . . .

DEUEL RICHARDSON, Manager, Public Relations Department, National Fire Protection Assn., Boston

Seaway School

. . . The Massena High School ["Big School on the Seaway," January] is one of our brainchildren and we are fond of credit. . . .

STANTON LEGGETT, Engelhardt, Engelhardt and Leggett, New York, N. Y.

Ed.: Engelhardt, Engelhardt and Leggett were educational consultants at Massena High School; the superintendent there is Walter S. Wilson.

Overview Down Under

. . . The University of New England at Armidale is the only university in Australia to award a graduate diploma in educational administration, and my colleagues and myself find OVERVIEW a stimulating, interesting journal which gives a good picture of the American educational scene. . . .

W. G. WALKER, Lecturer in Educational Administration, University of New England, Armidale, N. S. W., Australia

National System

The editorial . . . in the November issue concerning a national system of education [*As I See It* by Walter D. Cocking] is one of the most important editorials on education that has appeared in recent years. . . .

CHARLES H. BOEHM, Superintendent, Commonwealth of Pennsylvania, Department of Public Instruction, Harrisburg

Circle **OV-108** on reply card, last page

Here's the whole story on ENVIRONMENTAL HEALTH *in* SCHOOLS

How the Airkem Program can rapidly increase comfort and well-being...help toward attendance records and good marks...make for better relations with parents, students and the community... yet add little to your budget.

Nothing gets faster results! Everybody benefits from a better health environment. Children "do better in school." Illness drops, attendance climbs. Teachers, parents, visitors will heap praise upon you when you give the school a clean, odorless, agreeable and *healthful* new "climate."

It's easy with the Airkem Program—a scientific but extremely simple way to improve living conditions and health conditions in every school area, including corridors, gym, auditorium, rest-rooms, locker-rooms, classrooms, teachers' lounge, even the school bus! At the same time, this program takes care of all cleaning, disinfecting and insecticide needs.

Airkem gets to the heart of the problem

The Airkem program is the only *complete* program of basic sanitation maintenance. It thoroughly cleans all surfaces. It kills bacteria—kills insects. And it kills odors by counteracting them. No strong perfumes or chemical smells are added.

There's no mystery about it! All you do is see to it that the proper Airkem product is used in the proper way in its proper place in the school. Procedures are simple, easy to put into practice.

And here's more good news!

Often these Airkem procedures actually *save money* and *save time*. How? By combining two or even three housekeeping jobs in one operation, thereby eliminating duplication of effort and freeing your maintenance staff for other work.

And what a job these Airkem products do! The strongest, most obnoxious smells are met and conquered—rest-room, laboratory, kitchen and wet-clothing smells that had to be "lived with," or so you thought. No more!

Only Airkem offers this program

The program hinges on a unique and exclusive Airkem technique, that involves *combining* natural odor-counteractants with the ingredients of commonly-required maintenance products. As a result, Airkem products do not contaminate the environment as ordinary maintenance products do. Instead, they produce an air-freshened effect, while performing routine maintenance tasks.

No other cleaning product, or sanitizing product, or insecticide product is "like" an Airkem product. No other program of sanitation maintenance is "like" the Airkem program.

Call your nearby Airkem representative for a survey, and demonstration. There is no charge. You will be amazed by the helpful and useful environmental health data he will place in your hands.

Airkem products are safe. *No Airkem products contain formaldehyde. None release ozone. None can induce an anesthetic or narcotic effect on nasal tissue or the perceiving senses.*

John Hulse, Dept. O-2
Airkem, Inc., 241 East 44th St., New York 17, N. Y.

Send free 61-page Survey on school cleaning and custodial work in 14 Levittown schools, New York System.

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School_____

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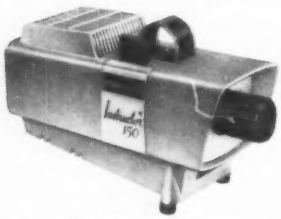
GRAFLEX SCHOOL MASTER* FILMSTRIP AND SLIDE PROJECTOR

Ideal for large audiences and small groups as well. Many advanced time-saving features make the School Master the favorite projector of teachers everywhere. Handles filmstrip or 2″ x 2″ slides with equal ease. Exclusive built-in carrying handle. Entire Condenser system removes as a unit for cleaning. Exclusive accessory rewind take-up rewinds filmstrips into storage container automatically. 500 watt and 750 watt manual or remote control models from $84.50.

School Master 750, above, is shown with exclusive accessory rewind take-up and semi-automatic slide changer.

E-Z VIEWER for convenient illuminated previewing of single frame filmstrips • 3-times enlargement • Folding stand permits 45° viewing angle • Positive advance • Easy to thread • Only 4½″ wide, 2¾″ high and 5¾″ long • Weight 24 ounces. Only $15.95.



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FILMSTRIP PROJECTOR WITH EXCLUSIVE PUSH-BUTTON FILM ADVANCE ONLY $29.75

Specifically designed for smaller audiences, the Instructor 150 is particularly useful in the instruction of smaller classes, lecture and study groups. Just push a button to advance the film. Light, easy to carry . . . and costs so little! 3″ f/3.5 lens. Push-button on-off switch • Rear elevation adjustment • Built-in film take-up compartment • Complete operating instructions permanently affixed to projector.

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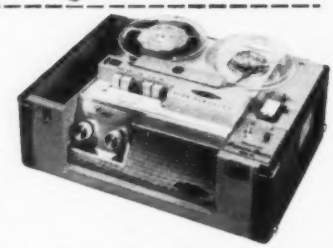

Classic Projector Master Tape Recorder records an inaudible signal on tape for automatically advancing filmstrips in School Master and other remote control projectors. Ideal for those lessons that require both sight and sound combination for an effective classroom program.

Features push-button operation, built-in tape splicer, two speakers plus high frequency extender, carrying case, and latest safety wiring, $249.50.

Model AV-5 ($219.50) has all the above features except the automatic electronic projector control.

*Trade Mark. All prices subject to change without notice.

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ONE VIEW

Archibald B. Shaw

The Adequate Administrative Staff

WHY DO SO FEW administrators in education have an adequate staff for the titanic tasks they face? What is an adequate staff? How do we get proper help?

The number of responsible heads of educational institutions to whom these last two questions are among their most pressing is legion. Very few of these leaders even remotely resemble the Parkinson image of empire-building bureaucrat. Most of them have disgracefully little help. The toll on their health, vigor, and satisfaction in their work is heavy. But even more important is the penalty on the progress of their institutions which simply must move ahead to meet the constantly greater challenges.

We're not pushing for a Be-Kind-to-Your-Superintendent (-President, -Principal, -Director) Week. The issues aren't his health and happiness. Most of these fellows are going to work too hard no matter how much help they have. Ours is a Free-Your-Educational-Leader Campaign. The test we propose is the quality of the program and the rate of change it achieves towards greater effectiveness.

The answers to the first question—why don't they have more adequate staff—are many. Included are some major ones which would probably surprise a lot of faculties and boards, and flabbergast the even more uninformed outsider. As a matter of fact, they reflect credit on the dedication of the administrator even while demonstrating a shorter-range vision than most of us would be willing to confess.

We're just too busy meeting the demands of our job to find time to analyze why we are too busy to find time to analyze. It's too much like asking New York City's fire chief to outline a good administrative set-up for his fire department at the moment he is directing all his energies to the task of beating the fire on the Navy carrier. In this fire-fighting, improvising, multi-headed role we play, it's no use pointing out that things would somehow go on in our absence. We don't want them to "go on." We urgently desire that they go better.

Nor can we reasonably be expected to take time from what for most others would be "off-duty" hours. We're already too guiltily aware of the endless intrusion on hours and days we've hoped (and ought) to set aside for family and for personal development.

When, by superhuman effort, we have wrenched ourselves away for a little reflective thinking and planning, what happens? We have to make a budget—and get one adopted. If we're lucky, the added staff position or two survives our own evaluation of priority of needs, and is still in the administratively presented budget. But who ever gets a proposed budget adopted unchanged? When something has to be cut back, the conscientious administrator nine times out of ten turns to his own staff expansion plan for the first cut-back. Cynical or suspicious faculties notwithstanding, the evidence is clear that through his commitment to and belief in other pressing program proposals, this does happen. That is the usual "empire-building" of chief administrators!

In one short piece we can propose no sweeping formula nor detailed blueprint either for what is an adequate staff or ways to go about getting one. In our view, though, there are a few generalizations worth attention:

At some point someone not *immersed in the daily tasks is needed to give an outsider's overview.*

Help can be had by finding what others are doing and how "authorities" suggest meeting similar problems.

Each situation is unique, and the number and kind of administrative staff must respond to that difference.

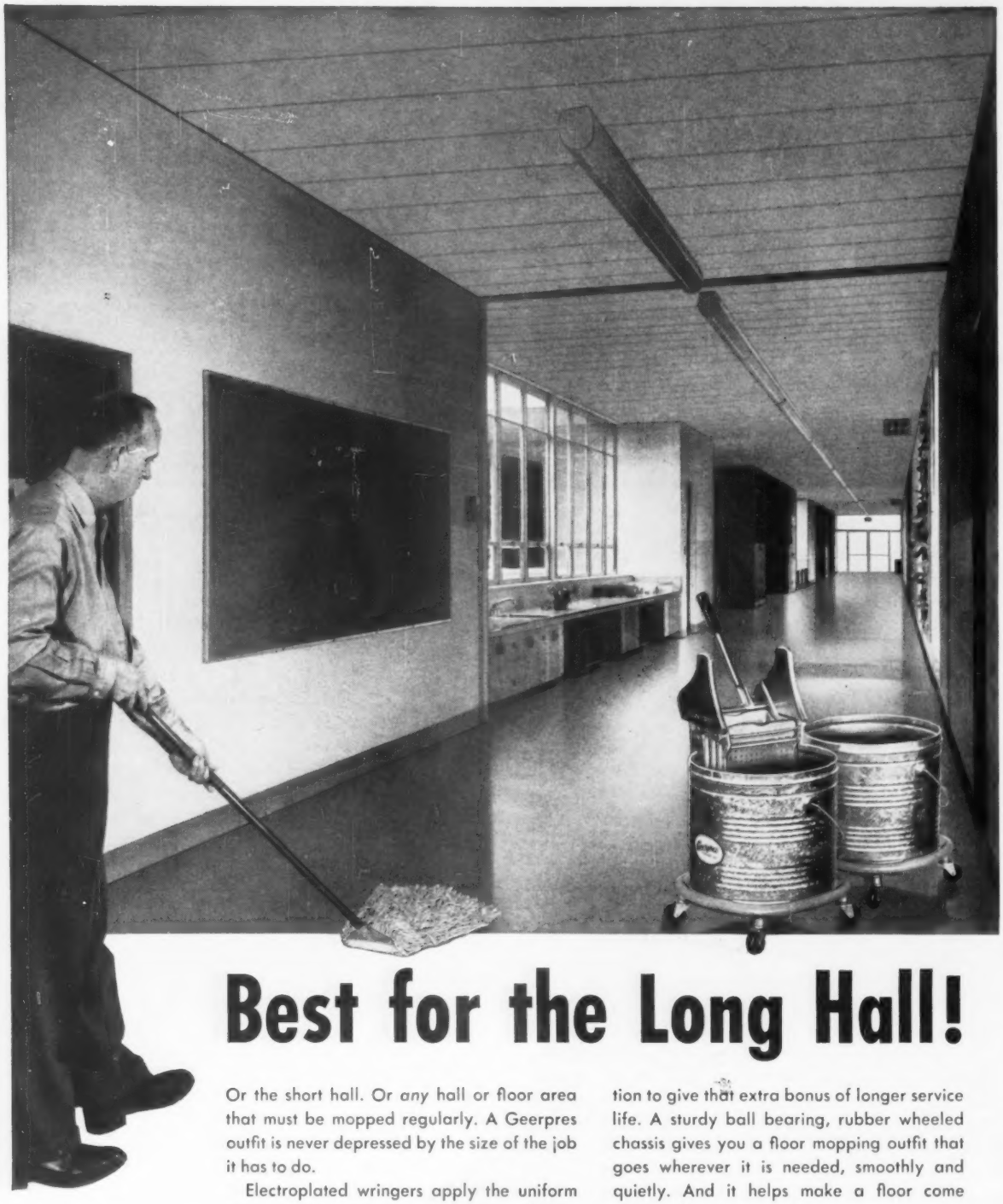
The fundamental base is an exhaustive listing of the necessary and useful tasks to be done.

Job descriptions, in detail, should derive from that listing of tasks.

The best job description will be re-made by the person filling the position—and should be.

Agreement by faculty and board on tasks to be performed and skills required is a necessary prerequisite to establishing adequate staffing.

Empire-building is a piece-by-piece process. Building an adequate staff for administration is different. Here there is a well-thought-out agreed grand plan. It is achieved in planned steps. It is re-evaluated at planned intervals. It is directly related to the goals and is essentially consistent with the processes of the institution it is serving. ●



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Or the short hall. Or *any* hall or floor area that must be mopped regularly. A Geerpres outfit is never depressed by the size of the job it has to do.

Electroplated wringers apply the uniform pressure of staggered tooth gear design; wring mops drier, easier and faster. Water is forced downward, back into buckets that have been hot-dip galvanized *after* fabrication to give that extra bonus of longer service life. A sturdy ball bearing, rubber wheeled chassis gives you a floor mopping outfit that goes wherever it is needed, smoothly and quietly. And it helps make a floor come cleaner faster as it goes.

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FORUM

Principles For Merit Pay

In America, we believe in the basic precept: "from each according to his ability and to each according to his performance"—both in quantity and quality. Merit pay for teachers is consistent with this philosophy. A system that consigns all teachers, regardless of individual differences, into one, inflexible salary schedule, is not consistent with the principle of allowing each to achieve in terms of his ability.

Merit pay should be based on a single salary schedule foundation, but with a profound change in the single schedule. In the past, the upper end of the schedule has been open only by exit from teaching; the lower end has been closed and locked. No teacher, regardless of how poor the quality of performance, falls below the base salary schedule. This allows no differentiation between the ineffective, the mediocre, the good, and the excellent.

Only those teachers who request to be evaluated should be considered for the highest levels of pay, based on merit. Any teachers who are not performing satisfactorily, in the opinion of the supervisors, administrators, and other officials, should be evaluated by the supervisory and administrative staff. Special conferences and seminars should be arranged for these teachers, aimed at eliminating all weaknesses and elevating their performance to a satisfactory level, and higher if possible.

Salaries for teachers rated at the highest level should be at least equal to that of the superintendent. This would tend to keep the excellent teachers in the classroom, where they can make their greatest educational contribution.

Merit rating, alone, will not solve all the problems that plague education in America; it is no magic, one-step formula. But it is, however, an important step toward education that can be more dynamic, more creative, and more effective.—*W. A. Shannon, executive director, National School Boards Assn.*

Abecedary of Teaching Pressures

Occasionally we hear about some conspiracy ("progressive education," "collectivist," or even "educationist") which really runs our schools. But all of us who lead educational institutions know better!

In a stray moment of amused despair, we set down a very partial list of people and forces which affect what is taught. The agony came from selection—there really are so many choice items that can't find room in a single run-through of the alphabet. Add a score or two of your own!

Accrediting organizations (AACTE, North Central)
Board of Education (of Trustees, of Visitors)
Community (Citizens Advisory Committees)
Departments (chairman or collective)
Employers of graduates (or professional societies)
Faculty (in full, or in committee). Also Foundations
General public (taxpayers, donors, voters)
Higher, receiving, educational institution
Individual teacher (unfashionable, but inevitable)
James Bryant Conant (and others of good will)
Ku Klux Klan (and purveyors of hate)
Legislatures (harmful effects of alcohol, Arbor Day)
Magazines (purveyors of "expert" opinion to public)
National Associations (Teachers of English, Science, etc.)
Organizations to "protect" Americans (Legion, NAM)
Parents (all kinds)
Quacks ("you only need to learn phonics to read")
Russia (but how we wish we could say Research!)
Standard tests (or state syllabuses)
Televised "teaching" (state, local, or airborne)
U. S. Congress (National Defense Education Act, e.g.)
V. I. P.'s (Admirals, Generals, or the local hero)
World Events (drop French, teach Chinese)
X-students, who long for the good old days (C.B.E.)
Young people themselves (by their course choices)
Zealots ("nothing matters if we don't teach driving")

Inclusion on the above list implies no stigma. If your own pet pressure has been omitted, notice that we have cheated a little to keep our list down to twenty-six. We think we could have made at least one more complete list without duplication of the items used here.

Do We Cheat the Able Student?

It is now the fashion to lead off all proposals for improvement of education with the flat assertion that we have been giving most of our money and attention to the slow learners while neglecting, ignoring, or somehow depriving the talented student of his fair share. Like so many sweeping generalizations this one has gone largely unchallenged for two reasons: it has the merit of truth —limited, not typical, localized; and it is usually the prelude to a plea for more funds. But those of us who have been in education for years know that it just is not true.

There are schools for emotionally disturbed (mostly private) which lay out thousands of dollars a year per child. There are also schools for college preparation (also mostly private) which spend relatively large amounts.

But every responsible investigation of which we know has discovered the opposite generality. The college-headed student in small high schools especially (and the typical high school is a small one) gets the smaller classes, the higher salaried teachers, the larger share of textbooks, library, and other supplies.

We're glad for his opportunity. We covet better opportunity for him and for every child. ●

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How

projected costs

ENTER YOUR SCHOOL CONSTRUCTION PICTURE

According to a recent study made by a team of professional architectural engineers, projected cost factors such as heating and maintenance can raise the ultimate cost to taxpayers of a hypothetical classroom as much as FIVE times—depending on whether the walls are made of brick, metal or glass. Here is a summary of their findings:

Wall Type	Initial Cost Per Sq. Ft.	Ultimate* Taxpayer Cost Per Sq. Ft.
Brick	**$2.30**	**$4.13**
Metal	**$6.00**	**$9.20**
Glass	**$4.60**	**$20.48**

** Based on 50-year life*

The details of this study—plus other important facts about school construction—are given in an interesting new booklet, "A FEW HARD FACTS ABOUT THE DESIGN, COST, CONSTRUCTION OF THE MODERN SCHOOL BUILDING."

Price 60c. Write for copies to:

Structural Clay Products Institute,
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ECONOMIC SCENE

Room at the Top

A SURVEY of school administrators' salaries shows that:

About	25	executives	earn between	$25–40,000.
"	200	"	" "	20–24,999.
"	500	"	" "	15–19,999.
"	5,000	"	" "	10–14,999.

Salaries for school administrators have picked up considerably over the past five years. Within this time, the number of executives paid over $25,000 has probably doubled. Salaries in the $20–25,000 range have increased even more sharply.

Average of the top 1,000 salaries in any profession are a good indication of the income level to which ambitious and able practitioners in that field can aspire. In school administration, this is just shy of $15,000. In medicine, engineering, law, and most large fields of business, it exceeds $100,000.

Although teachers' salaries are not included in the table above, several hundred classroom teachers have now passed the $10,000 level. [See Shannon in this issue's *Forum* in which he argues that "Salaries for teachers rated at the highest level should be as least equal to that of the superintendent."]

Increase in teachers' salaries last year, as measured in current dollars, was nearly 4 percent. Rise in the cost of living, however, held their net gain down to something between 1 and 2 percent. Even though their wages have risen slightly over other occupations since 1947, teachers have not yet regained the relative position they enjoyed in 1939.

Over the last twenty years, teachers' salaries have more than tripled while the cost of living has only slightly more than doubled. Starting with the base year of 1939, this is the index pattern in the real wages of teachers (changes in salaries adjusted to changes in the cost of living) over the succeeding two decades: *1940*—101.3; *1943*—90.8; *1945*—100.8; *1947*—93.8; *1950*—108.1; *1952*—111.9; *1954*—125.1; *1956*—141.8; *1958*—151.6; *1960*—157.4. In other words, teachers today have 57.4 percent more buying power than they had in 1939.

Beginning teachers in many school systems (particularly large cities) are paid between $4,000 and $5,000. A number of communities pay their starting teachers even more than this.

But the adequacy of any starting salary can only be judged in comparison with competing salaries in the

same locality. A beginning salary of $3,800 may top all others in one community while one of $5,000 may be relatively low in another.

The variable cost of living from one region to another has not yet been adequately considered in reckoning teachers' pay. The entrance of Alaska into the Union pointed up this issue. Teachers can earn more in Alaska than in any other state but they also pay more to live there. Example: prices in Fairbanks are 50 percent higher than in Seattle, Washington. A teacher in Alaska may expect to earn up to $8,000 but she may also have to pay $2 for a dozen eggs.

Within the past several years, school boards have considered raising the upper end of their teacher salary schedules. Top salary a teacher could expect in 1955 was about $7,000. Now the range usually extends to $10,000. Some schools have even managed to put through supermaximum schedules. Except in these few cases, however, school boards have been reluctant to extend salary schedules above the $10,000 margin. Anything over this sum is reward for extra or exceptional service.

Many educators believe that the solution to this salary problem lies in paying these exceptional-service teachers top salaries and making them available to larger numbers of students. More than mere due reward for excellence, they believe this would attract better quality people into teaching and thereby benefit education generally.

—Harold F. Clark

Representative Bond Issues

(From Nov. 30 to Dec. 22, 1960)

School District or College		*Amt. in Millions*	*Moody Rating*	*Net % Interest*
Cal:	South Bay Union HS	$1.	Baa	3.7304
	Carmel Unified	1.995	Aa	3.221
	San Diego Unified	10.	A	3.4298
Ida:	Boise Ind	2.15	Aa	3.25751
Ill:	Tazewell Co #108	1.5	Aa	2.9018
	Peoria Co #150	7.8	Aa	3.1489
Ind:	Indianapolis Sch City	1.04	Aaa	2.95
Mich:	Davison Community	1.65	*Baa	4.1136
N.J.:	Saddle Brook Tp	1.186	Baa	3.96
	Madison Tp	2.173	Ba	4.176
N.Y.:	Hempstead Union Free #9	5.35	Baa	3.67
	Hempstead Union Free #2	2.08	Baa	3.81
	Wappinger, Pkeepsie Cent #1	3.658	A	3.45
	Brookhaven Cent #12	5.103	*Baa	3.65
Utah:	Ogden	1.5	Aa	2.6327
	Granite	1.05	Aa	2.5546
Va:	Va Polytech (bldg revenue)	1.	NR	4.09
Wash:	Pierce Co Clover Pk #400	1.	A	3.456
W.Va:	Concord Coll (dorm revenue)	1.648	NR	2.875
Wisc:	Whitewater Jt #1	1.2	*A	3.161

*—*provisional* *NR—none assigned*

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NEW! ZEP-O-TRED 20 waxless polish

reduces the wear and maintenance care

Here is real floor protection, a product of modern chemistry. It's the new Zep-O-Tred 20!

This waxless finish (made of the newest emulsifiable polymeric resins) gives all types of composition floors a brilliant gloss without dangerous slipperiness. Like a shield of invisible armor, this finish is scuff-, soil-, and water-resistant, making maintenance far simpler. It can be damp mopped repeatedly and can be used to touch up worn spots without repolishing entire floor and without leaving lap marks. Zep-O-Tred 20 re-buffs to a high gloss without leaving troublesome surface dust to be tracked onto other clean areas. In addition, Zep-O-Tred 20 is self-sanitizing, guarding against floor-borne germs.

Write today for full information about the effectiveness of Zep-O-Tred 20 in your maintenance program. Your inquiry will receive prompt attention.

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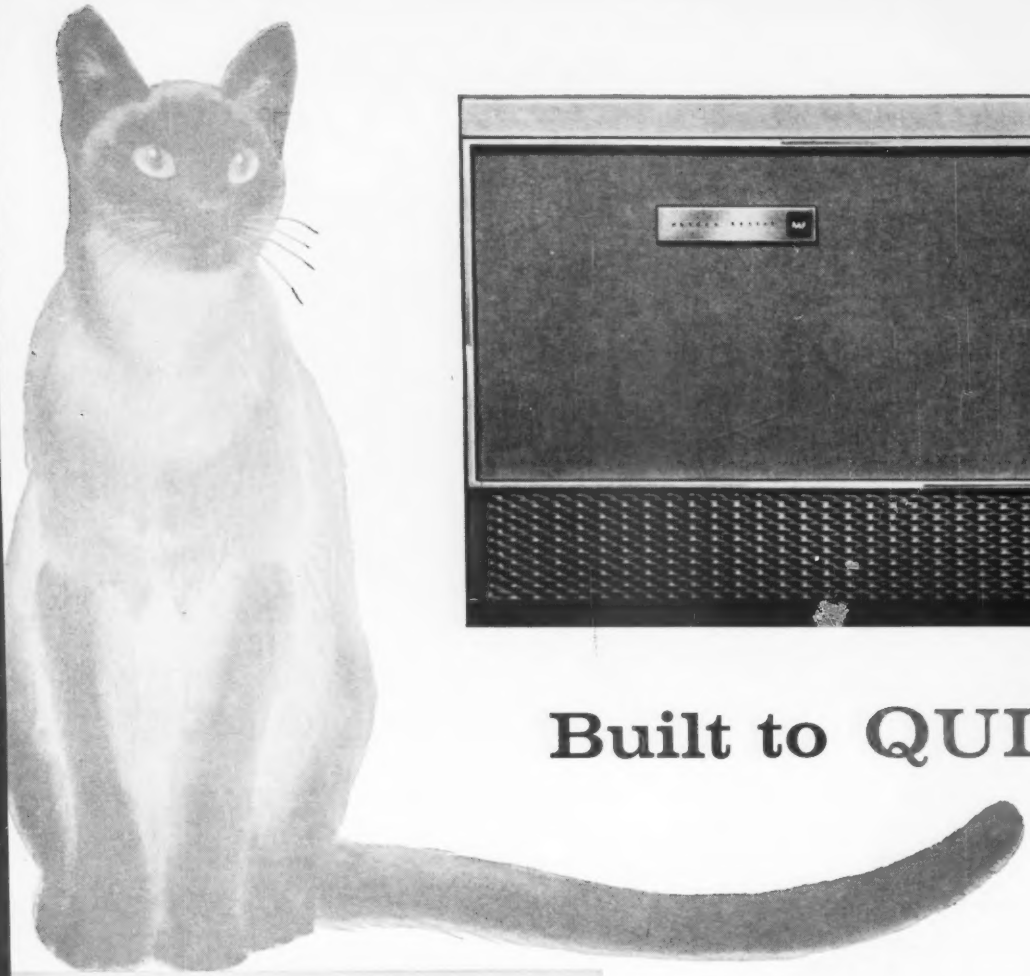
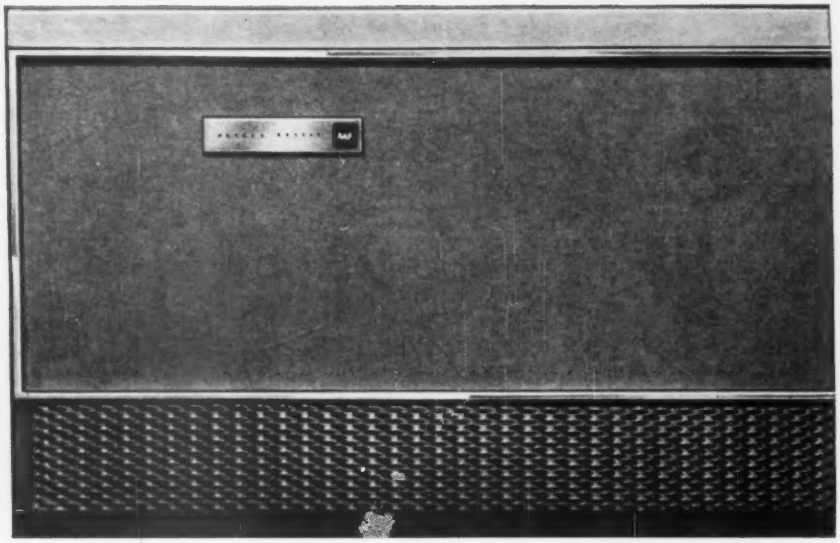
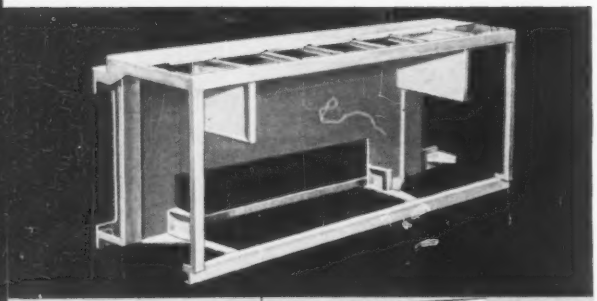




Built to QUIETLY

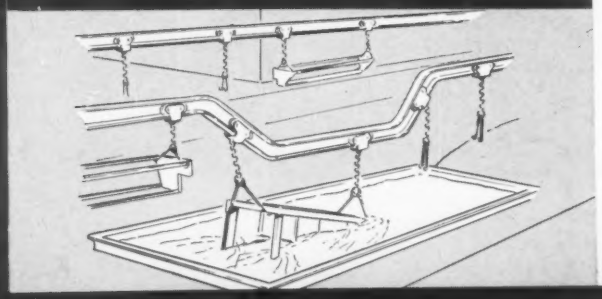
QUIETER...50% QUIETER THAN OTHER UNIT VENTILATORS

A unique new fan housing design hushes sound level. Herman Nelson unit ventilators are 50% quieter than other makes. Extruded top discharge grille design and "modular" fan construction are combined with a new first in fan housing design to keep the sound level extremely low.



LIFE-OF-THE-BUILDING CONSTRUCTION

New single-unit, all-welded frame construction is an important feature of every Herman Nelson Unit Ventilator. Structural maintenance is eliminated. The entire frame, after fabrication, is dipped into a permanent corrosion- and rust-resistant solution. Outdoor and room air damper frames are also dipped for maximum protection against rusting.



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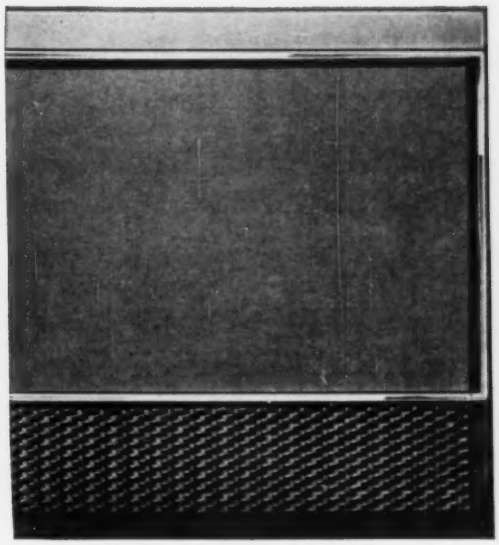


ADVANCED ARCHITECTURAL STYLING

New Herman Nelson Unit Ventilator styling was inspired by the distinctive patterns of modern school architecture. This new styling was acclaimed by Product Engineering magazine as an "outstanding achievement in product engineering and design". Decorator panels are available in six beautiful colors. Basic unit color is charcoal with aluminum trim. Gracefully "lanced" intake grilles and extruded aluminum top discharge grilles help the unit efficiently "breathe" fresh-air atmosphere into the school classrooms.

outlive the school you put it in!

EVERY Herman Nelson Unit Ventilator is expertly designed from the inside out to provide accurate room-by-room thermal control *for the life of your new school building.*

Here are four of the many special Herman Nelson features which assure long, reliable unit ventilator service:

1 Single-unit welded frame construction

2 Corrosion-resistant "bath" for unit and damper frames

3 Special low-sound-level fan housing design

4 One-piece filter system

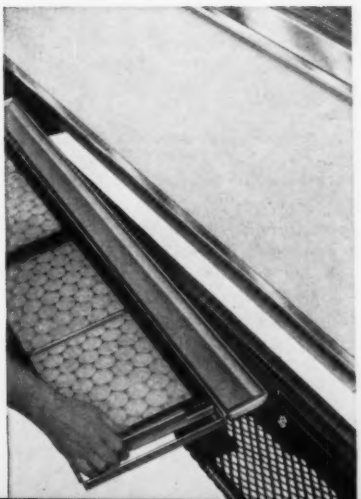
Consistent product improvements have led architects and school officials to expect the best *first* from Herman Nelson for over 50 years. Herman Nelson developed the *first* commercially successful unit ventilator, the *first* hot water heating element for unit ventilators, the *first* downdraft control system, and most recently, the *first* air conditioning unit ventilator.

Write for a free copy of the new full-color Herman Nelson Equipment Guide for Schools. Herman Nelson School Air Systems Division, American Air Filter Company, Inc., 257 Central Avenue, Louisville, Kentucky.

Herman Nelson AAF

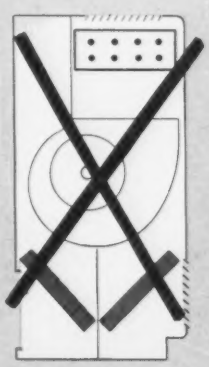
SCHOOL AIR SYSTEMS DIVISION

American Air Filter Company, Inc., Louisville, Kentucky

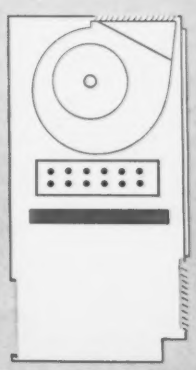


EFFICIENT ONE-PIECE FILTER SYSTEM

Herman Nelson's one-piece filter system permits the mixture of outdoor and room air to pass through the entire filter area at all times. This is important. Split filter systems "hide" the second filter which is often overlooked when time comes to change the filters. This damages filter efficiency by reducing full outdoor air delivery and restricting cooling capacity. Filters on Herman Nelson Unit Ventilators are easily accessible through lower front panel (see photo).



Less efficient split filter system



Herman Nelson's efficient one-piece filter system.

CALENDAR

FEBRUARY

9–10, Headmasters Assn. At Rye, New York. Ex. sec.: John F. Gummere, William Penn Charter School, Philadelphia 44, Pa.

11–15, National Assn. of Secondary-School Principals. At Detroit, Michigan. Ex. sec.: Ellsworth Tompkins, 1201 16th St., N.W., Washington 6, D. C.

22–25, The American Assn. of Colleges for Teacher Education. At Chicago, Illinois. Ex. sec.: Edward C. Pomeroy, 1201 16th St., N.W., Washington 6, D. C.

22–25, American Educational Research Assn. At Chicago, Illinois. Ex. sec.: Guy T. Buswell, 1201 16th St., N.W., Washington 6, D. C.

25–28, American Assn. of School Administrators. Western regional convention. At San Francisco. Ex. sec.: Finis E. Engleman, 1201 16th St., N.W., Washington 6, D. C.

28–March 3, American Assn. of Junior Colleges. At Washington, D. C. Ex. dir.: Edmund J. Gleazer, Jr., 1785 Massachusetts Ave., N.W., Washington, D. C.

MARCH

3–4, Independent Schools Education Board. At New York City. Ex. sec.: Esther Osgood, 186 Centre St., Milton 86, Mass.

5–8, Assn. for Higher Education. At Chicago, Ill. Ex. sec.: G. Kerry Smith, 1201 16th St., N.W., Washington 6, D. C.

11–14, American Assn. of School Administrators. Central regional convention. At St. Louis, Mo. Ex. sec.: Finis E. Engleman, 1201 16th St., N.W., Washington 6, D. C.

12–16, Assn. for Supervision & Curriculum Development. At Chicago, Ill. Ex. sec.: Margaret Gill, 1201 16th St., N.W., Washington 6, D. C.

14–16, National Assn. of Collegiate Deans and Registrars. At Prairie View, Tex. Ex. sec.: Edwin M. Thorpe, Florida A & M University, Tallahassee, Fla.

17–21, American Assn. for Health, Physical Education and Recreation. National convention. At Atlantic City, N. J. Ex. sec.: Carl A. Troester, 1201 16th St., N.W., Washington 6, D. C.

18–22, Department of Elementary School Principals. At Atlantic City, N. J. Ex. sec.: Robert W. Eaves, 1201 16th St., N.W., Washington 6, D. C.

25–28, American Assn. of School Administrators. Eastern regional convention. At Philadelphia, Pa. Ex. sec.: Finis E. Engleman, 1201 16th St., N.W., Washington 6, D. C.

27–30, American Personnel & Guidance Assn. At Denver Colo. Ex. dir.: Arthur A. Hitchcock, 1605 New Hampshire Ave., N.W., Washington 9, D. C.

APRIL

2–7, Assn. for Childhood Education International. At Omaha, Neb. Ex. sec.: Alberta L. Meyer, 3615 Wisconsin Ave., N.W., Washington 16, D. C.

4–7, American Industrial Arts Assn., Inc. At St. Louis, Mo. Ex. sec.: Kenneth W. Brown, P.O. Box 2626, Buffalo 26, N. Y.

4–7, National Catholic Educational Assn. At Atlantic City, N. J. Ex. sec.: Rt. Rev. Msgr. Frederick G. Hochwalt, 1785 Massachusetts Ave., N.W., Washington 6, D. C.

10, Child Study Assn. of America. At New York City. Ex. dir.: A. D. Buchmueller, 9 East 89th Street, New York, N. Y.

16–19, Assn. of College Unions. At Colorado Springs. Ex. sec.: Edgar A. Whiting, Willard Straight Hall, Cornell University, Ithaca, N. Y.

18–21, American Assn. of Collegiate Registrars and Admissions Officers. At Miami, Fla. Sec.: Hattie Jarmon, Education Training Division, I.C.A., Washington 25, D. C.

19–22, Educational Film Library Assn. At New York City. Ex. sec.: Emily S. Jones, 250 West 57th St., New York, N. Y.

23–29, Department of Audio-Visual Instruction. At Miami Beach, Fla. Ex. sec.: Anna Hyer, 1201 16th St., N.W., Washington 6, D. C.

Data for Delegates—Sightseeing jaunts in and near Miami Beach can include the Seaquarium; Fairchild Tropical Gardens, largest tropical botanical garden in the U.S.; Parrot Jungle, where varieties of exotic birds are displayed in a tropical setting; Monkey Jungle, where monkeys run wild and humans are enclosed in cages; a Seminole community at Musa Isle Indian Village; and the University of Miami. There are plenty of beaches, boating, fishing, and golfing. For music lovers, the University of Miami Orchestra and Chorus will perform "Samson and Delilah" on Apr. 23–24. Temperature stays in the 70's.

24–28, American Institute of Architects. At Philadelphia, Pa. Ex. sec.: Edmund R. Purves, 1735 New York Ave., N.W., Washington 6, D. C.

26–29, Institute for Education by Radio-TV. At Columbus, Ohio. Ex. sec.: I. Keith Tyler, 154 North Oval Drive, Columbus 10, Ohio

26–29, National Assn. for Gifted Children. At New York City. Ex. dir.: Ann F. Isaacs, 409 Clinton Springs Ave., Cincinnati 17, Ohio

30, State Universities Assn. At New York City. Ex. sec.: Charles P. McCurdy, Jr., 1785 Massachusetts Ave., N.W., Washington 6, D. C.

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A Language Laboratory System that's as advanced as this modern building!

The brand new High School at Wayland, Massachusetts, recently completed and now in operation, is as modern in its structure, internal arrangement, and instructional facilities as its advanced pedagogic aims.

These objectives are implemented by the modern concept of "teaching teams", supported by the latest and most effective teaching tools, such as the LinguaTRAINER Electronic Language Laboratory System.

Installed in the Wayland High Languages Center, the LinguaTRAINER fulfills the requirements of the instructional concept of "planned variability" because its versatility makes it adaptable to any shift in educational programming. LinguaTRAINER can accommodate any size class from individual students or small classes to seminar groups or large conference meetings.

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Outstanding among LinguaTRAINER's features is the absence of distracting mechanical controls at the student's position; there's simply one switch here nothing else.

The Instructor's mechanical duties are minimum, and are centralized at the Teacher's Console. Individual Tape Recorders and all electronics are housed in a Remote Control Cabinet.

LinguaTRAINER is the first remote control language laboratory system used extensively in schools and colleges. Over two years' successful classroom operation attest to the superior quality and excellent workmanship of all components.

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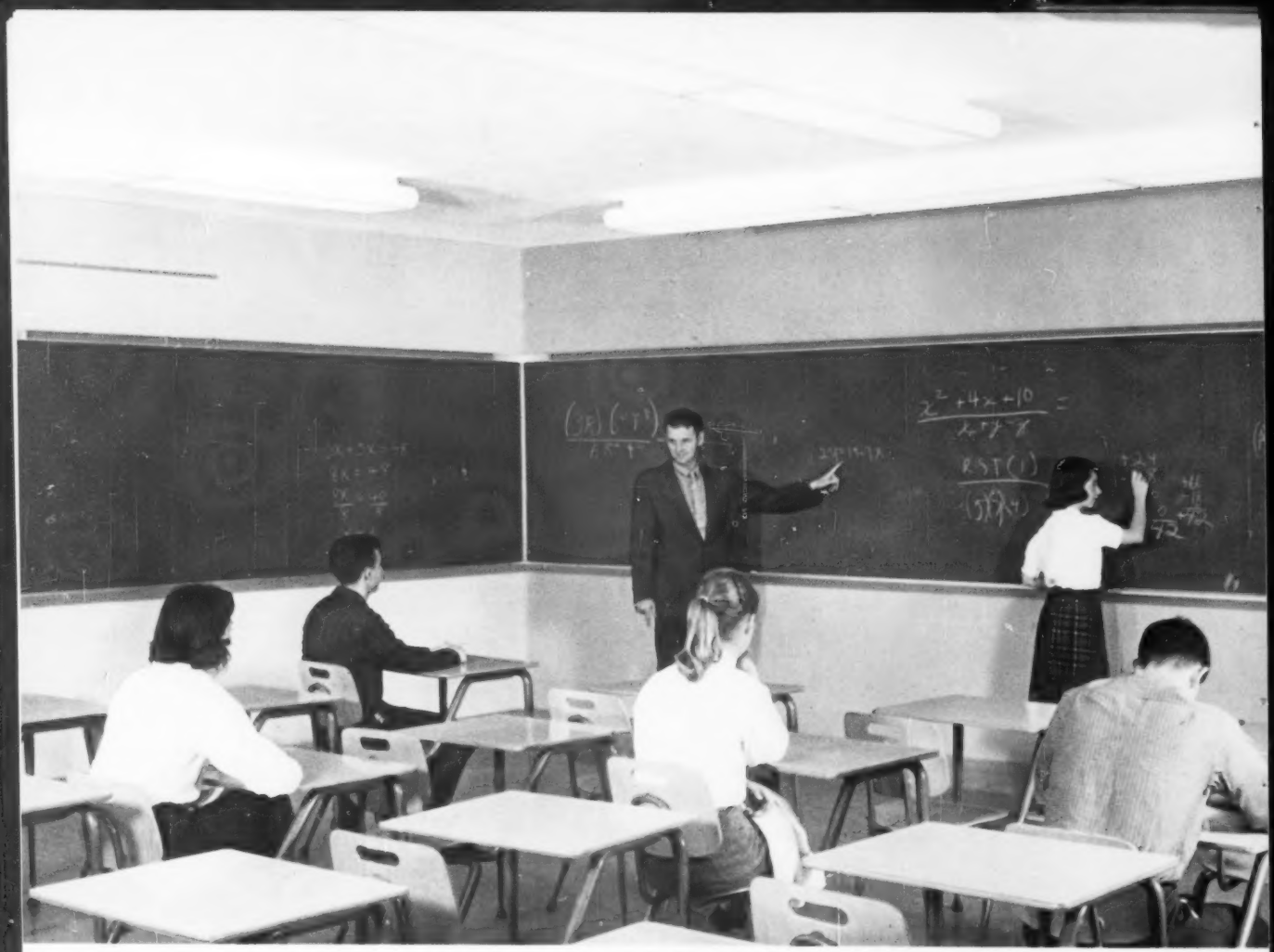
ELECTRONIC LANGUAGE LABORATORY SYSTEM

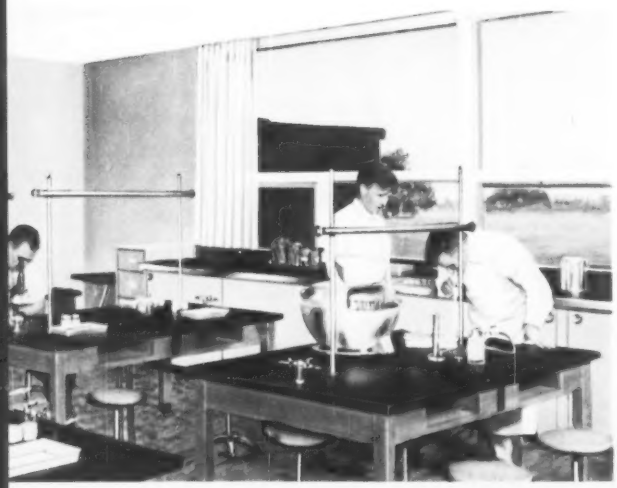
REMOTE CABINET | TEACHER'S CONSOLE | PLUG-IN AMPLIFIER | TAPE CARTRIDGE | STUDENT HEADSET



In this pleasant classroom a light value of a warm color is used to counteract the effect of cool light from north and east.

Pittsburgh COLOR

provides color environment



This science room has been painted a neutral hue to make color perception easier.

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Educators in hundreds of schools have learned by actual experience that Pittsburgh COLOR DYNAMICS improves work and study habits of pupils of all ages, as well as the efficiency of teaching staffs.

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● **When painted** according to COLOR DYNAMICS, each room, corridor and stairwell is treated individually. You paint sunny effects into gloomy rooms and hallways. You bring

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LATE NEWS

For further coverage, see pages, 83–87.

BATTLE SHIFTS: The spotlight on school desegregation shifted from Louisiana to Georgia this past month.

In the second break in school segregation in one of the five "deep South" states, two Negro students are attending classes at the University of Georgia. Under a federal court order the first two Negroes in the school's 175-year history were admitted only after federal judge William A. Bootle restrained Gov. S. Ernest Vandiver from cutting off funds under state law and closing the school. The U. S. Supreme Court also refused to delay the admittance of the Negroes.

Their first day in class set off a wild campus riot in the evening, forcing university officials to suspend the pair "for their safety and that of the student body." Rioters included about 600 students and members of the Ku Klux Klan.

About half the university's faculty condemned the riot and signed a resolution calling for the return of the two Negroes. For the second time in two days, Judge Bootle used the authority of the Federal Government and ordered the university to end the suspension of the two Negroes.

Both students—Charlayne Alberta Hunter and Hamilton Earl Holmes—are top-ranking students. Miss Hunter, a high school honor graduate, is interested in a journalism career. Holmes, a star football and basketball performer, is also an honor graduate. He's taking a pre-medical course and wants to practice in Georgia. Both students stress that all they want is an education; they're not interested in making history or in breaking down barriers.

Meanwhile, at the *University of Tennessee* two Knoxville Negroes became the first of their race to enroll for undergraduate study. The University's board of trustees adopted a desegregation policy in November. The two enrolled without any disturbances.

In *New Orleans*, the white boycott of two integrated schools eased somewhat with 13 white children and one Negro attending one school; three Negro girls still had the second "integrated" school to themselves.

Teachers, caught between the state legislature and the New Orleans school board, are being financially squeezed. After facing a payless payday in December, teachers in the segregated schools were finally paid in January when the legislature backed down. No provision was made for teachers in the two integrated schools, but they were paid by the board with funds unfrozen by a recent court decision.

Gov. Jimmie H. Davis has convened a new 30-day session of the legislature to try and pass a one-cent sales tax increase. His first attempt was defeated by the legislature. Davis claims the new tax would raise $28 million badly needed to continue the fight against integration.

Delaware has been told that its grade-a-year desegregation is too slow. This is the effect of the U. S. Supreme Court's refusal to review an Appeals Court order requiring racial desegregation of the entire Delaware public school system in the fall. Previous state plans had called for complete desegregation by 1970.

To offset any desegregation gains, Sen. Herman Talmadge (D-Ga.) has proposed a bill that would prevent federal courts from enforcing integration of Southern schools. At the same time, he advocated a constitutional amendment that, in effect, would kill the Supreme Court ruling that Negroes must be admitted to previously all-white schools.

* * *

FORMULATING PROGRAM: The Kennedy Administration's education program is rapidly taking shape.

Presently receiving consideration are the far-reaching proposals submitted by the President's task force on education, headed by Frederick L. Hovde, president of Purdue University. The group called for a four-and-a-half-year program costing $9.4 billion. Of major importance is the task force's departure from the view that federal aid is a temporary emergency measure. They left no doubt they consider such aid to be of permanent interest to the federal government and the personal concern of the President.

As a first step, the group urged a $1.44 billion grant program supporting public school construction, teacher salaries, and other educational requirements. This would be backed up with nearly $1 billion for college and university construction and loans to students. The first-year total of close to $2.5 billion far exceeds the requests defeated in the 86th Congress.

Among the specific porposals:

- $30 a pupil per year would be paid to all states, who would transmit the money to local districts for construction, teacher salaries, or other educational improvements. Annual cost: $1.2 billion.
- An additional $20 a pupil per year would be provided to low-income states. Annual cost: $140 million.

• Cities with more than 300,000 population could receive an additional $20 a pupil per year to help them meet their "grave and unique educational problems." Annual cost: $120 million.

• A combined program of grants and loans of at least $500 million for the first year would go to colleges and universities for academic facilities. Thirty percent would be for loans; 70 percent for matching grants.

• College Housing Loan Program would be extended on a permanent basis to permit long-range planning. An increase of $1.4 billion over four years in the amount of loan money available.

• National Defense Education Act would be extended for five more years. Highest priority should be given to enlarging the national fellowship program to attract better teachers. Loans also enlarged. The current practice of forgiving up to half the loans given to college students if they teach in public schools should be extended to those who go into parochial schools and colleges, too.

• Appointment of a President's advisory committee to raise education to the level of importance now enjoyed by science and economics.

Hovde considers the proposals the minimum necessary to meet the nation's educational requirements. However, President Kennedy has expressed doubt over resources now available to take on the whole program. HEW Secretary Abraham Ribicoff conceded that any program of such magnitude would run into trouble in Congress.

One serious consideration by the President and Secretary Ribicoff is strengthening the Office of Education. Both believe the Office could be more effective in rendering advice on education policy to the President and Congress.

A special study of the Office has implied that it has been an "office of educators" serving only the organized teaching profession and neglecting the need for better public understanding of school problems.

Although funds administered by the agency have grown from $50 to $500 million since 1949, relatively little is spent on development and dissemination of original education research.

The first education bill of the new session was introduced by Sen. Warren Magnuson (D-Wash.) to award each state $1 million for the purchase of educational television equipment. Of 257 available educational channels, he pointed out that only 52 are on the air. Funds from his measure would be used only for equipment, not personnel.

It is expected that Rep. Frank Thompson (D-N.J.) will introduce the overall school support measure in the House, with Sen. Lee Metcalf (D-Mont.) handling the Senate version. Prolonged committee hearings are not anticipated, since the issues were so thoroughly thrashed out in committee and floor debate last year.

JOBS SCARCER: Business and industry are generally tightening up in their recruiting efforts among college seniors. Graduating engineers are still in great demand, but 1961 employment of non-technical talent appears likely to drop by more than three percent below 1960 levels.

These were among the findings of the fifteenth annual college employment survey just completed by Northwestern University placement director Frank S. Endicott.

Starting salaries for graduates with bachelor's degrees will continue to rise. Reporting companies said they planned an average of $520 a month for the starting engineer of 1961, $458 for accounting graduates, $451 for men in sales, and $439 for general business trainees.

* * *

OUTREACH: The United States should use some of the $5 billion in foreign currency, accumulating here through the sale of surplus agricultural products, to assist educational institutions abroad.

That is one of the recommendations President Kennedy received from a special task force he appointed shortly after election. The group was headed by Prof. James M. Davis, University of Michigan.

The currency is now held for use only in the country where the commodities were sold. The report believes it could better be used to expand foreign institutions and finance American-sponsored programs in the countries.

No new scholarship programs were suggested, but existing programs should be expanded, the report said. It pointed out that 90 percent of the 50,000 foreign students now in the U. S. are not financed by our government.

It recommended that the U. S. assist the institutions where these students are studying by matching grants and helping to bring foreign scholars here.

The Davis report also called for the Federal Government to reimburse schools for the full cost of educating foreign students.

* * *

PEACE CORPS: Another of President Kennedy's campaign proposals is a step nearer realization: a "peace corps" of young men and women to assist underdeveloped nations.

Although Kennedy had originally suggested the plan as an alternative to the military draft, his task force report urged otherwise. Dr. Max Millikan, director of the Center for International Studies at the Massachusetts Institute of Technology, who prepared the report, said there would be sufficient volunteers to staff the proposed corps without "offering the bait of freedom from the draft."

Volunteers would be selected (with a minimum age of 21), specially trained, and sent abroad for two years. Pay would be in local currencies at applicable rates for the work done.

The report recommended establishment of an International Youth Service Agency to administer the "peace corps." The agency would operate mainly through contracts with universities.

The Millikan report urged the immediate start of the program on a limited pilot basis with a few hundred members employed on tasks vital to the host countries.

* * *

FOR THE EARLY BIRD: Continental Classroom, NBC's early morning educational television show, started its second semester on January 30 with a new three-credit course on probability and statistics, taught by Dr. Frederick Mosteller, chairman of the department of statistics at Harvard. The course is broadcast in color Monday through Friday from 6:30 to 7 a.m. and is carried by 171 NBC stations.

Some 300 colleges and universities are offering credit to students who watch the course and pass examinations given by each school.

Modern algebra was presented this past semester. Modern chemistry, offered last year, is being repeated this year a half hour before the mathematics course.

* * *

EXODUS: Dissatisfaction with salary and working conditions is forcing capable men to leave teaching. This not-too-surprising conclusion was reached in a study by Columbia Teachers College of Air Force veterans who entered the profession after World War II.

Although the men liked teaching, the study showed that 200 of a total of 658 left the profession for better paying jobs. Earlier tests had identified these 200 as "mentally superior."

The study showed that the group who left teaching bettered their incomes by 25 percent. More than 75 percent of those who left said they might teach again "if conditions improved." In addition to the need for higher salaries, they also cited the need for smaller classes, better equipment, and fewer non-teaching duties.

* * *

CROSS BREEDING: A major film producer, Louis de Rochemont Associates of New York, and one of the country's leading textbook publishers, D. C. Heath & Company of Boston, have formed a new organization known as Heath-de Rochemont. It is believed to be the first time that two such organizations have pooled their talents to produce a basic instructional program, according to Louis de Rochemont.

First project of the company is a foreign language course, "Parlons Francais," currently being televised for third and fourth grade students. The 60-film series will be available to schools and TV stations and includes written materials, records, sound tapes, and teachers' guides.

* * *

FARED YOU WELL?: Education received the bulk of budget increases voted by most state legislatures meeting in 1960, according to the Council of State Governments.

A dozen states reported budget increases totaling $282 million for public schools. Higher education payments were increased by more than $91 million over the previous fiscal year in seven states.

Some of the big increases for public schools listed by CSG: Kentucky, 60 percent; Colorado, 33 percent; Virginia, 25 percent; Alaska and Mississippi, 20 percent; Maryland, 11 percent; Arizona, 7 percent; and California and Michigan, 6 percent.

In higher education, the South has fared particularly well, according to the Southern Regional Education Board. Since 1951, SREB says, state appropriations to public colleges and universities have creased by 95 percent.

During 1960, three Southern states passed measures providing for student aid, and a student loan program passed in another. Five Southern states also made provisions for raising faculty salaries.

* * *

MUSIC HATH CHARMS: Music education, particularly in secondary schools, should not be limited to those who are musically talented, says a report from the National Education Association's Project on the Academically Talented Student and the Music Educators National Conference. Academically talented youngsters can benefit from learning about music as a means of communication, says the report; they may not be interested or able to perform, but good music can become as mind-stretching as physics or mathematics.

* * *

STUDY ABROAD: Modern foreign language institutes will be conducted this summer in Russia, France, and West Germany by three American universities under the sponsorship of the U. S. Office of Education. More than 200 secondary school teachers are expected to participate.

Indiana University (Russian), Stanford University (German), and the University of Oregon (French) are involved in the program.

* * *

WELL-TRAINED BUSINESSMEN: To prepare American businessmen for overseas positions, many corporations send their executives to special orientations within the company, to foreign institutes, or to special seminars in this country.

One of the most thorough of the seminars is going on at American University, Washington, D. C. The four-week course covers all aspects of international business operations, plus the culture, traditions, and customs of foreign countries. Students' wives are urged to attend special ancillary courses.

Students, chosen by their respective companies, are in middle or upper management. Enrollment is limited to twenty-five each session.

The course is sponsored by the Business Council for International Understanding, a non-profit organization of some 70 American companies doing business overseas.

* * *

SCHOLARSHIPS GO ASTRAY: Most colleges pay "lip service" to the ideal that scholarships should go to needy students who would otherwise not be able to attend college, says Dr. John L. Holland, research director of the National Merit Scholarship Corporation.

He contends that "only a few scholarship winners actually need financial assistance to attend an accredited college. A large proportion of our limited scholarship funds are going to relatively well-to-do students who want to attend expensive colleges."

Holland blames this situation on the fact that a few colleges control a large proportion of the scholarship funds.

Writing in the latest issue of the Columbia Teachers College Record, Holland also put the lie to the popular misconception that the prestige schools—the expensive colleges—are necessarily the best. He says that a college's productivity may depend more on the quality of its incoming students than on any attributes of the college itself.

* * *

TOO IMPERSONAL: This country's schools are drifting toward "impersonal solutions" to vital educational problems. That fear was expressed by five national educational organizations in a joint statement called "Labels and Fingerprints." The statement cites trends which are "squeezing individuals into a common mold."

The educators call for re-examination of rigid grade organization ("ladder concept") where children advance a whole year or are kept back for a year; ability or homogeneity groupings within the graded organization; the emphasis on rote memorization; horizontal and vertical enrichment; the increasing emphasis on the "master teacher" image; and the use of outside testing instruments.

The five organizations are the American Association of School Administrators, the Association for Supervision and Curriculum Development, the National Association of Secondary School Principals, the Department of Elementary School Principals, and the Department of Rural Education.

The school program must instill in the individual "the desire to find himself in a group, not bury himself in it," the statement concludes.

* * *

BIG GIVING: American philanthropy reached a new high in 1960 of more than $8 billion, according to estimates of the American Association of Fund-Raising Counsel.

This compares with $7.8 billion in 1959 and $7.1 billion in 1958. Although there was an increase in giving, the Association pointed out it was low in comparison to previous years.

Giving to higher education is expected to show the greatest percentage increase of any classification of philanthropy, according to the Association. In 1959, voluntary support for education totaled $939 million.

Religious giving, which represents about one-half the total annual philanthropy, increased over 5 percent, while health, welfare, and recreation showed slight increases.

* * *

POTPOURRI: American colleges and universities award more than 1,600 different types of degrees, according to the first such survey by the U. S. Office of Education. End result is a great deal of proliferation and academic chaos, reports the OE. . . . Northeastern University in Boston has solved its parking problem by awarding a contract for the construction of a multi-story structure to house 1,000 cars. Costing $2 million, it will be completed by the fall of 1963. . . . The world's population will surpass three billion before the end of 1961, according to the Population Reference Bureau. . . . The Office of Eduation has approved 527 National Defense Graduate Fellowship Programs at 146 graduate schools for the 1960–61 academic year. Programs are designed to increase the nation's supply of college teachers. . . . A $1.8 million grant by the Ford Foundation will enable the next 25 educational television stations that go on the air to receive a $53,000 videotape recorder without charge. The grant was made to the National Educational Television and Radio Center, which predicts that from 35 to 40 new ETV stations may go on the air in the next few years. . . . The good student graduating this year with a degree in education can just about write his own ticket, according to the University of Wisconsin Teacher Placement Bureau. Starting salaries range as high as $4,630 a year. . . . A study guide for teaching sixth graders the differences between capitalism and Communism has just become available to District of Columbia social studies teachers. The outline will give children the facts an informed citizen needs in order to understand both systems and "engender enthusiasm for our own freedom." In Dallas, Texas, school officials have also authorized a plan for teaching pupils more about what Communism is and how to combat it. Work will be woven into American history and advanced civics, both required courses. . . . Over 13.5 million youngsters are participating in this year's National School Lunch Program, according to the U. S. Department of Agriculture. It's the first year since the program was established in 1946 that participation has topped 13 million. . . . The Florida Supreme Court has upheld an anti-Communist loyalty oath required of all school teachers and other public employees in the state.

SEARCHING THROUGH RESEARCH

Good Principal–Effective Leader

WHY ARE SOME principals more effective than others? Because they behave differently.

Is it experience or educational level that makes the difference? Not necessarily. What a principal does seems to be unrelated to his years on the job and to the amount of graduate study he has taken.

Can effectiveness be increased by training? Tentatively yes—or at least the University of Florida experiment seems to say so.

All three of these answers emerged from a score of studies done at the University of Florida over the past six years, with and on public school principals. In the studies leadership was defined as "behavior (of the principal) in relation to other people connected with his school, which: resulted in the use, or increased frequency of use, of activities which experts consider desirable educational practices; or influenced the attitudes, morale, or quality of human relations among parents, pupils, or teachers."

The behavior of principals was charted by use of an eighty-six situation checklist, complete with from five to fifteen options, for activities of principals carried on with pupils, parents, teachers, or combinations of these.

In the latter use the list was reduced to twenty situations which experience showed to discriminate better for some purposes than the longer list, and which were much less painful to complete. Mechanical attempts to sort out groups of principals didn't work, nor did attempts to find common factors of experience, training, or any of scores of personality traits which would account for like behavior as reported on the checklist. Finally, teams of judges assigned principal responses to carefully defined categories such as democratic, authoritarian, most effective practice, situational (i.e. problem-solving) and non-situational (applying rigid formula). Then principals were found to differ markedly in the frequencies of activities in the several categories.

Democratic behavior was defined as action involving the staff in decision-making in matters of policy or program; action keeping open channels of communication; and behavior which respects the dignity of individuals or groups. Similar definitions were given the other categories.

The one factor that correlated with effectiveness was sex: women as a group outstripped men as a group in the measures of effective elementary school principalship.

Description of the effective principal: The effective principal will demonstrate democratic behavior as he works with teachers, individually and as a group, with parents, with pupils, and with the community. He will know the school he administers and its place in the educational system. He will be consistent, and teachers will know what to expect of him. He will involve others—teachers, parents, pupils—in decisions that affect them. He will lead people to work together to assess successes and failures. He will keep people informed. He will listen.

Apparently as a consequence of this behavior, he will find teachers more often using practices recommended by experts. He will find desirable curriculum changes being made. He will find favorable attitudes on the part of teachers, pupils, and parents. Teacher turnover will

By Dr. Vynce Hines, coordinator of research at the University of Florida, Gainesville. This paper is one of a series on research in administration institutions affiliated with the University Council on Educational Administration, whose executive secretary is Jack Culberson, and whose headquarters are at The Ohio State University.

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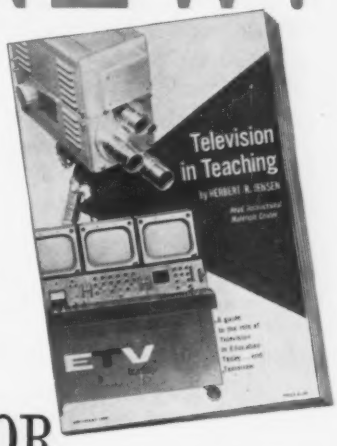
NEW!



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be lower; pupil attendance will tend to be higher.

He will not be running the show singlehanded. He will have helped those around him to acquire competence in decision-making, and to develop self-direction. His leadership is tested by the degree others have been enabled to define and make progress towards mutually satisfying goals.

When effective behavior, as defined above, seems to have developed only fortuitously under conventional training programs and seems to be independent of length of experience, it is time for experimentation in ways of helping poor principals become good ones, and good ones better.

At the University of Florida, after the research had been studied, a one-year leadership education program was undertaken with thirty-five of the principals who had participated in the earlier research. The group met weekly for a school term, two-and-a-half hours at a sitting. They worked in a low-threat atmosphere, using themselves as guinea pigs and using their problems as course content.

The basic supposition behind the course was that if there were to be change toward more effective behavior, there would have to be first constructive change in the perceptions of themselves and of their situations on the part of the principals. If perceptions changed in this sort of class program, then behavior would change. Changed behavior in class would re-enforce the changed perceptions which in turn would encourage principals to change behavior outside of class. As they changed behavior on the job, it was expected that they would gain in effective leadership, since such desirable consequences seemed to accompany such behavior.

For one semester, little happened. Perhaps the short workshop has no more long-range impact than the one-night revival. But changes did begin in the second semester. They were observable in the class and on the job. Supervisors reported that principals were being effective at county meeting where for years they had attended in silence. Teachers reported principals running with looser reins, to mutual satisfaction. At least two women principals were reliably reported to be "treating their husbands differently."

Follow-up studies made a year after the class was over, and again at the end of the second year, indicated that the changes were persisting. Unfortunately, the Sputnik furor seemed to contaminate efforts to assess long-range effects which had been hypothesized. But in studies of parent opinion, at least, indications were that if little ground had been gained, none had been lost.

From this experiment in training, it seems that principals can change their perceptions of themselves and of their jobs. They can learn to behave more effectively. Such change takes time and requires something different from the usual training program. But apparently under proper conditions, the changes will tend to persist. ●

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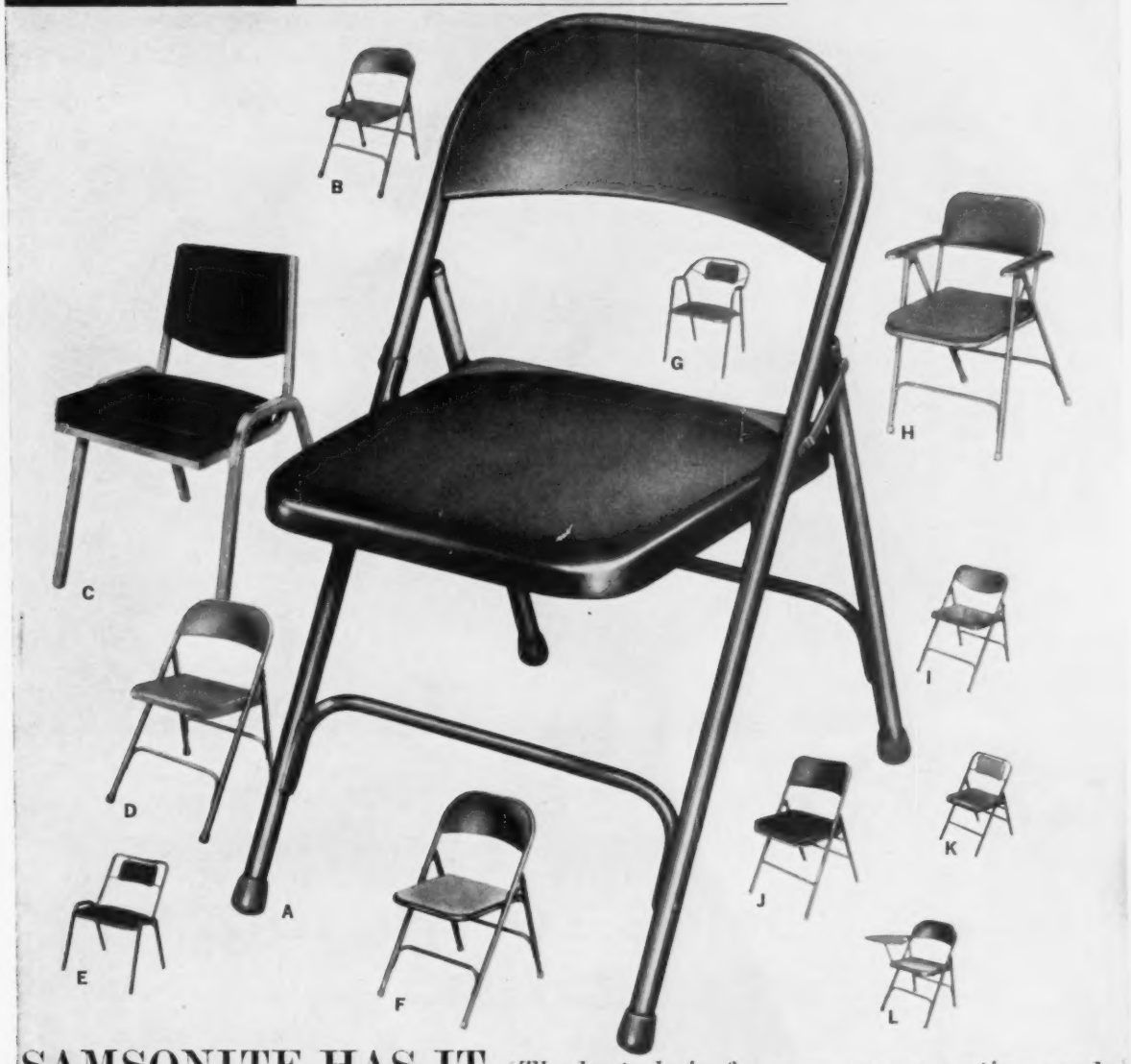

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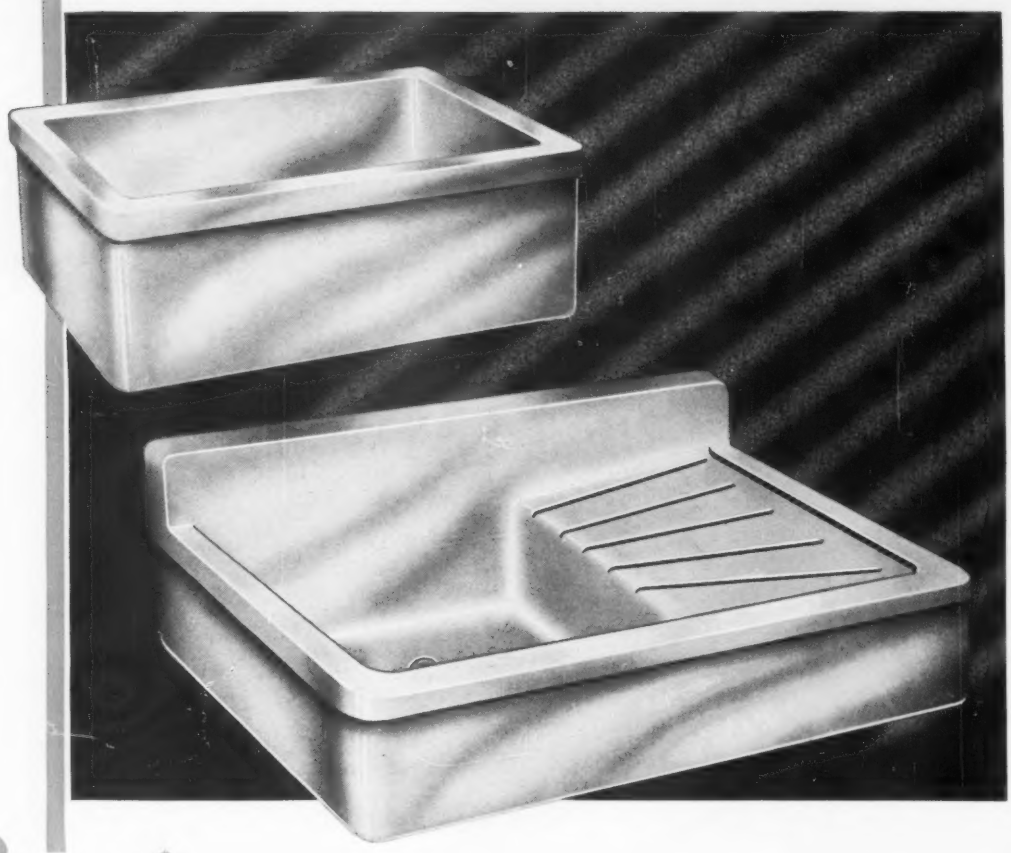

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CLOSE-UPS

Frank Sparks

FROM HIS mid-Manhattan office, Dr. Frank H. Sparks directs a nationwide campaign, the success of which is vitally important to the future of higher education in this country.

Sparks, dedicated and vibrant president of the Council for Financial Aid to Education, firmly believes in the responsibility of business and industry to provide adequate financial support for the nation's colleges and universities. Objective of the Council, he explains, is to promote this voluntary support. "We believe education is stronger because of the gift money that flows to these institutions."

He added that corporation support has brought to education an objectivity that it lacked before. A corporation is cold business and it won't contribute money to any institution unless it's sure that the recipient is operating on a sound business basis.

Sparks volunteer giving.

It's axiomatic that if you have a college that attracts a large share of gift money, you have a good school, Sparks noted.

The success of the Council's efforts are seen in the fact that corporate giving to higher education has tripled during the life of the Council. In 1953 when it was founded, corporate giving amounted to $50 million a year. It's now risen to about $150 million yearly, Sparks says. He's quick to point out that the Council isn't solely responsible for this, although he thinks its efforts have been a major factor.

Before the end of the present decade, Sparks says, when total expenditures for higher education will have doubled, voluntary giving must also double. To make this possible, he's convinced that corporate giving must triple. In line with this, he thinks that $500 million a year in corporate support is a reasonable level.

The alert, gray-haired Sparks is a deceptive 70 years old. He was born on a farm in Indiana and attended public schools in Culver, Indiana, before going to work. By taking advantage of new business opportunities created by the rapidly rising popularity of the automobile, Sparks was able to found his own business with a partner in 1919—only eight years after finishing high school. Guided by his keen business sense, the firm grew steadily and is now known as Arvin Industries—a $75 million a year business making automotive parts, electrical appliances, and outdoor furniture.

Sparks was fortunate to accumulate enough money at the age of 39 "to give me economic independence." Faced with the enviable—but difficult—decision of what to do with the rest of his life, he took a serious look at what he considered the foundations of our country. He was looking for something useful and interesting—something by which he could "help put back in the kitty" some of the

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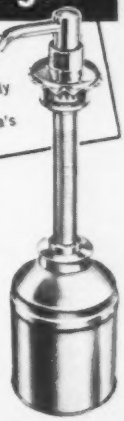

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Close-ups (continued)

things the country gave him.

He decided to go into education with the idea of becoming a college president because he had always found satisfaction in working with young people. He went to college for eleven years (A.B., Butler University, 1935; A.M. and Ph.D., University of Southern California, 1937 and 1941) and two weeks before he received his doctorate was offered the presidency of Wabash College, Indiana.

He described his fifteen years at Wabash as "a wonderful experience, fully gratifying." Because of his convictions about the responsibility of business, he founded the Associated Colleges of Indiana in 1948, an organization that would be effective in telling the college story to business. Along similar lines, he was a member of the Association of American Colleges, serving on that group's commission on colleges and industry. He has been a director and member of the executive committee of the Council for Financial Aid to Education since 1953, becoming president in 1958.

Sister Margaret, S. N. D.

WOMEN WHO are not only well educated, but who are especially trained in judgment and reasoning for better decision-making in later life are the objective of Sister Margaret, S. N. D., president of Washington, D. C.'s Trinity College for girls.

"The things girls find here are designed to achieve that objective," she told OVERVIEW. "Classes are small, there is ample time to consult with instructors, and courses are concentrated to give the student a thorough grounding in her chosen specialty as well as in general subjects. From the first, the girls are introduced to a well-run student government system (it was established in 1919) and an honor system. They learn to discipline themselves, and to live in a society."

Young president.

At 37, Sister Margaret is one of the youngest heads of the nation's institutions of higher learning. She was selected as Trinity's president a little over a year ago, while she was teaching English on an exchange basis at Notre Dame College in Glasgow, Scotland.

She's no stranger to Trinity, from which she was graduated in 1945 and later awarded an M.A. and Ph.D. in English. One of a family of six children, she is a native of New Rochelle, N. Y., and attended public grammar and high schools there. She entered the order of the Sisters of Notre Dame of Namur—a Catholic teaching order—the year after graduation, taught in a diocesan high school in Philadelphia, then joined the Trinity staff in 1952 as a member of the English department.

As president, Sister Margaret heads a staff of eighty-one faculty members (thirty sisters, seven Priests, the rest laymen) and a student body of about 700—of whom all but 125 are full-time resident students.

The relatively large faculty in proportion to the student body gives one key to Trinity's methods. Freshman classes are reasonably large, but from the sophomore year on, class groups are kept small.

In the freshman year, all students are required to take laboratory science subjects, as well as basic units of history, foreign language, literature, philosophy, and theology. But, unlike many other colleges, students begin to work in specialized fields in their sophomore year.

Much concerned over the attitudes and outlook of her students, Sister Margaret and her faculty spend as much time as they can with their students on discussions that range from personal problems to world affairs. ●

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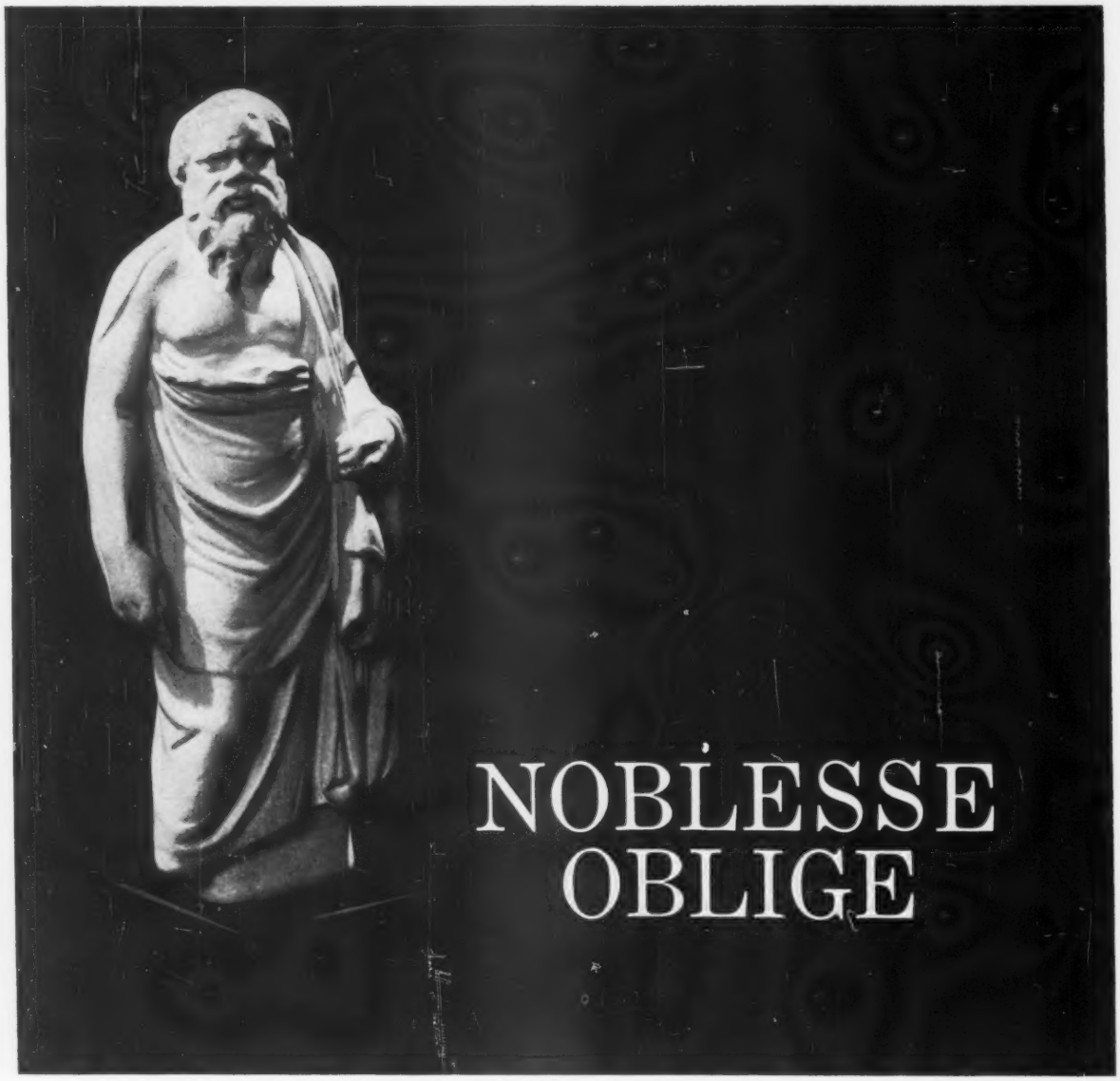

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Tomorrow's Engineer

THE WORLD challenge to America is based, to a large degree, on technology, and our technology is ultimately based on our engineering education. It thus becomes imperative to improve this training either through improving educational methods or by completely redesigning the process.

Since there is no point in improving our efforts to operate a process that produces the wrong product, a continued revamping of engineering education makes the most sense.

Any design for the education of engineers must first recognize the difference between a scientist, an artisan, and an engineer. All definitions of engineering employ the word "application" or a derivative, either directly or by obvious implication. Application is a key function of the engineer and provides the basis of discriminating between the engineer and the scientist. The engineer's job is to apply science, whereas his scientist colleagues are not basically concerned whether it may or may not be applied. To be classified an engineer instead of a scientist, or for that matter a machine operator, a person must be creative in devising new applications.

Another key word in defining engineering is "economic." It is the engineer who has the responsibility for the economic comparison and selection of alternative applications of science and art. It is impossible to divorce the engineer from this basic responsibility because only the engineer can maintain the guided search for the most economic alternatives.

The engineer must be prepared for this responsibility. He must understand the principles and techniques for economic comparison and selection of alternatives as completely as he understands the principles of physics. As this accomplishment requires special education, it is not too uncommon to find that the engineer is both unaware of and unprepared for this responsibility.

It seems axiomatic that one of the essentials in engineering is a knowledge of the human element. The building of the pyramids or of the first commercial steam engine was more than applying mathematics and art to the design of specific structures. All applications of science must resolve the human problems prohibiting the application.

Education in the liberal arts is one step that has generally been adopted to prepare the engineer for the human problems for which he is responsible. The general goal in liberal arts education for the engineer has been to include as many disciplines as possible—psychology, philosophy, history, government, sociology, economics, geography, communications—on the basis that all contribute to competence in human relations.

The first inclusion of liberal arts in engineering education may have been accidental—that is, without any concept of its role in engineering, but only of its role in the development of the individual.

The modern pattern is to include liberal arts in engineering or pre-engineering curricula. But if we are using a planned approach, why should we stop here? If experience with liberal arts is good, might we not expect equally good experience by adding selected disciplines specifically designed to educate the engineer "to work in conjunction with the organization and direction of essential human skills"?

Furthermore, the engineer does not work alone. He is part of some commercial organization and must direct his part of the organization as well as conform to the directions which govern his role.

We cannot avoid the conclusion

By George A. Taylor, professor of engineering and management at the Thayer School of Engineering, Dartmouth College, Hanover, New Hampshire.

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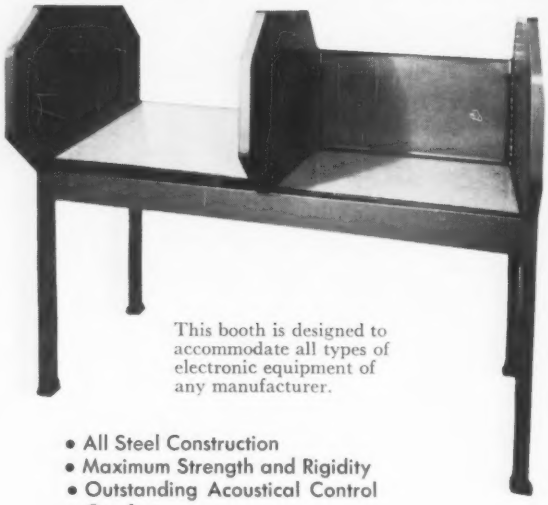

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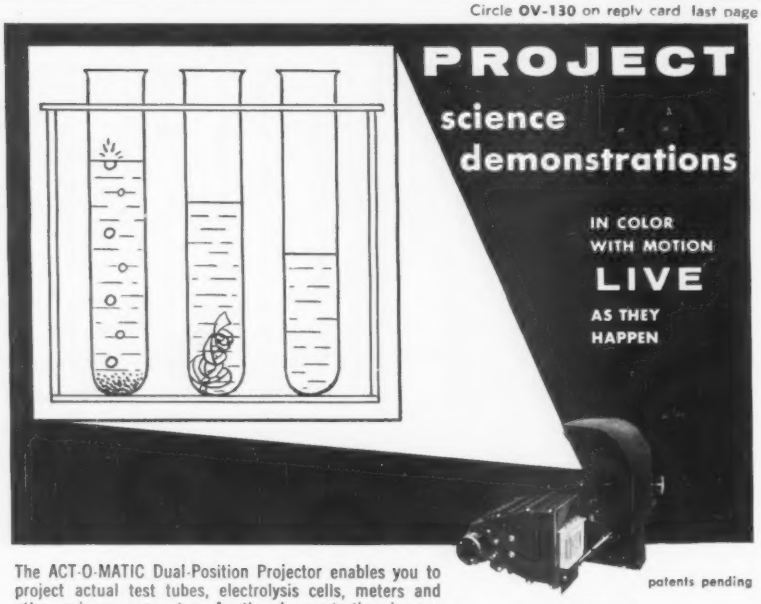

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Engineers (continued)

that engineering works are marvels of management whether they may be the construction of an office building in the heart of New York City, a jet strato-cruiser, or a radio selling for twenty dollars.

Consequently we cannot avoid the conclusion that the engineer is a manager. He must be competent to manage in various degrees: men, materials, machines, money, and methods. If he is "to do for one dollar what any artisan would do for two" he must be a competent manager.

Management is an integral part of the engineer's job. It is inextricably woven into his job function. It should not be excluded from his education nor should it be deferred until he enters industry, any more than his liberal arts education should be.

The management content in most engineering curricula is clearly inadequate. In improving this situation, it is not proposed to give the student all the management instruction he will ever need, but we can aim to make him literate in certain fundamental areas and also instill in him an appreciation of the need for continued management development.

All the while we have taken for granted a thorough foundation in the sciences and mathematics. However, even after this training there remains a great difference between the education of the scientist and of the engineer; this difference is provided by the engineering courses. The point is that education in the sciences without engineering courses cannot be accepted as adequate education for engineers.

The easy road to an "engineering" curriculum (and it may be followed very innocently) is to offer science courses labeled engineering. At present, this is the most likely cause of deficiency in the engineering content of an engineering curriculum.

Years ago, many science courses were called engineering because they were taught by the engineering school faculty instead of the physics department. In this way it was possible that some engineering graduates received no *bona fide* engineering courses, only science courses with a

variety of engineering labels and some pure mathematics courses (and some cook book courses). A most definite improvement is the use of the term engineering-science for science courses that were once called engineering—a reclassification in the right direction. This, however, is only one of the necessary steps.

I do not believe we should infer that only one type of course will meet this broad description. Certainly we have enough confidence in the originality and ability of educators to design courses in engineering that are distinctive from science courses. However such courses will generally involve the analysis or synthesis of systems in which the student may find an interplay of many disciplines: science, mathematics, economic selection, human considerations, even judicial problems.

Vocational, or trade, courses should not appear in college but should be reserved for on-the-job instruction as needed. Vocational courses should not be confused with engineering courses. Engineering case problems are presented not to be memorized (in fact, we anticipate they will not be encountered again) and the emphasis is on analysis. On the other hand, vocational courses teach facts with the emphasis on memory. Similarly, "cook book" instruction should be acquired on the job, not in college.

Engineering courses demand exceptional teaching. Too often the teacher is without a suitable text or adequate case problems to meet his needs in applying all the disciplines that go into specific engineering situations. He must often write his own material and find his own cases. Case writing in engineering colleges has not been developed or financially supported, so there is only a meager reservoir from which to draw. Consequently, the engineering teacher must conduct his own search. Because engineering is the application of so many disciplines, the engineering teacher must also keep abreast of the developments in science, mathematics, economics, and management, as well as the continuous new applications of these disciplines in industry.

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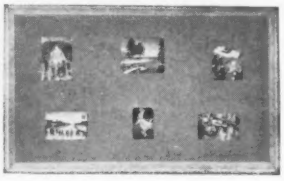

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Engineers (continued)

greater attention to the efficient use of time. Presently courses which teach engineering functions may duplicate the instruction in basic disciplines.

Another problem in the efficient use of time is created because the disciplines may be taught under a number of different jurisdictions. For example, electricity will be taught in physics, in engineering science, and in electrical engineering courses. The actual overlap depends on the success of communicating, coordinating, and planning for these courses.

The role of science in engineering is not to be underestimated. The two were divorced for many years and our early engineers in England and the United States practiced without employing much science in their art. That was a mistake which we have been correcting. However, this does not mean that science courses must henceforth constitute the sole technical education of engineers.

As we come down through history, man has consistently failed to integrate science and technology, with the two thus developing independently. With better integration in recent years, both science and technology have developed at an accelerated pace. Integration has, in fact, created an even greater and more vital need for engineers to keep technology abreast of the developments in science. A single discovery in science may have thousands of different applications and each application usually requires a great many engineers to achieve the transition from science to application. This role of the engineer requires education not only in science but in the economic creativity of technologies and in the management of human resources. The task of engineering education, therefore, is to train enough intellectually qualified men to make these applications. On their success depends our standard of living and our national security.

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IVAN LEARNS A TRADE

Two top men in vocational education tell what they observed inside Russia's classrooms

by Mark Nichols and H. H. London

On assignment from the American Vocational Association and the U.S. Office of Education, the authors travelled 7,000 miles inside Russia where they inspected schools, observed students, and talked with educators. They learned not only how Ivan learns a trade, but that the government makes sure that it's the right one. Mr. Nichols is state director of vocational education for Utah. Dr. London is professor of industrial education at the University of Missouri.

Under Stalin, Russia's education at the secondary school level catered primarily to the academically gifted. Premier Nikita Khrushchev rectified the "error" two years ago when he said of his country's young graduates: "[They] have little knowledge of practical matters, and inadequate training for production. Their schooling is somewhat divorced from life." He ordered a drastic shakeup of Russia's ten-year, primary-secondary school program to combat "an unhealthy attitude toward physical labor." Behind the gentle pronouncements, Mr. Khrushchev was facing up to a growing shortage of working manpower and unrest among "over-educated" high school and college graduates. For two years ago, Mr. K. also predicted that in fifteen years, the Soviet Union will lead the world in total production of economic goods. Vocational education has become the modus operandi for fulfilling this goal.

Ironically, while Russia has moved swiftly to emulate America's pre-Sputnik system of education, we have hysterically added more mathematics, science, and foreign language to our curriculum—trying to implement the program the Soviets abandoned as inadequate.

Long a careful observer of the Russian scene, Dr. M. D. Mobley, executive secretary of the American Vocational Association, has consistently cited the hazards of our aping another's education philosophies. "It takes extraordinary talent and training to be a good surgeon or a toolmaker, a good salesman or a nurse, a good farmer or a homemaker," he has said. "Let us have our own educators develop all these inate virtues with their historic, unmatched skills . . . and let's do it the American way."

Because it wanted first-hand observations of Russia's progress in pushing the Communist equivalent of vocational education, the AVA, in cooperation with the U.S. Office of Education, sent us to the Soviet Union last spring. We traveled some 7,000 miles inside Russia inspecting eight-year schools, ten-year schools, trade schools, vocational-technical schools, technikums, technical institutes, engineering colleges, and the University of Moscow.

We saw why the Soviets are making important gains in technical training and vocational guidance.

Ten-year schools. This is the organizational pattern for the elementary, junior high, and senior high school which children enter at the age of 7 and graduate at 17, their attendance being mandatory for eight years. The eight-year school is the equivalent in rural communities.

The Moscow Ten-Year School, a typical example of this program, operates two shifts—one beginning at 8:30 in the morning, the other at 2:30 in the afternoon. This school has an enrollment of 1,500 and a library of 17,000 volumes.

Some classes convene daily (the school week is six days) and some are taught only one day a week. Home economics, metal work, and carpentry are offered in the seventh grade for a two-hour, once-a-week session.

Eighth- and ninth-grade students work in factories four hours a day, two days a week during the school year. Factories pay for this production work through improvements in instructional facilities.

During the summer, eighth-grade students work on collective farms for twenty-five days, doing farm work or working at machine repair stations. Students who have completed the ninth grade work for at least twenty-five days in factories during the summer. These students may receive a small stipend for their summer employment.

All USSR examinations are given to students at the end of the seventh and tenth years. We observed in a school in Leningrad, however, that students and teachers know *at the beginning of the school year* the questions that will be asked in the tenth-year final exam. In effect, the questions become a course of study for the year's instructional program. For instance, there may be thirty-two questions with two parts—theoretical and practical—in physics. At the end of the year, students draw numbers out of a hat to find out which questions they will answer. A grade of 3, on a 5-grade scale, is required for passing. Only students with high grades in these finals are eligible to take the entry examinations for technical institutes and universities.

Such procedures convinced us that education under the Russian system is terrifically competitive. Students who graduate from ten-year schools probably *do* have two or three times the amount of mathematics and science that is required for entrance in specialized higher educational institutions in America. Only the top academic achievers, however, are included in this small proportion of the total Russian student population.

Today, the idea of becoming productive workers for the state is foremost among students in ten-year schools who spend almost one-third of their time during their final three years in vocational work experience.

Trade schools. The shift in emphasis from academic training for all students to vocational and technical training for many is evident everywhere in Russia, skilled and technical workers being in short supply. This education below the college level is taught in both trade schools and technical schools.

Students who enter trade schools must have completed at least seven years in the general education schools; thus, they are 14 or 15 years old when they enter. We visited the Moscow Building Trades School where about 80 percent of the students are boys. Surprised to see any girls at all in this type of program, we were told this is not unusual in Russia. Apparently it is not; we later saw women working along with men in all kinds of building construction jobs.

Photos by Sovfoto

Soviet workers train in a Siberian institute of machine building (above) and metal workers school in Moscow.

Trade school students get skill training for half of the first year (in the building and metal working trades) and related theoretical instruction the other half. They receive no stipends during their first year such as technical school and technikum students are allowed. They are, however, paid for their production work. We observed students making shelves for apartment buildings, for which they were paid 50 to 100 rubles ($5–$10) per month. During their second year they are paid about 30 percent of the amount a grade-seven worker would earn.

Second-year trade students work in the construction industry under the direction of their first-year shop instructors. They attend school one day a week for related technological work and to study for the examination. They are given time off with pay to prepare for and take this exam, which is conducted by the city supervisory staff in vocational education. A grade of three is mandatory for passing. Workers in factories are rated in terms of a seven-grade scale and paid accordingly.

THESE TRADE school students must spend at least three years working in the field of their specialty after they complete school. (If they want to change occupations later they must take additional training.)

Vocational-technical schools. Example of this type is the Moscow Metal Working Technical School. Like all such institutions, it is co-operated with a "patron plant," in this case a dynamo factory. Its students are preparing to become lathe operators, instrument makers, winders of electro-machines, and electro-mechanics.

Entering students, who must be graduates of ten-year schools, are 17 to 18 years old. Lathe operators and winders attend for ten months; others for a year and a half. (Students may enter quarterly—there is a graduation every three months.) Sixty to 70 percent of the instruction is shop training and the remainder is devoted to theoretical and related studies.

Final exams include manipulative and theoretical tests. Students are expected to attain a grade of 4 or 5 (on the 7-grade scale). Workers with a grade 4 in indus-

try earn about 500 rubles ($50) monthly. Higher grades are paid for at the rate of 150 rubles each. The work week at the dynamo plant totals forty-one hours—the same as for most factory workers.

The trade and vocational schools accept only the number of students that are needed for employment. Worker needs are first determined by planning committees; then students are enrolled (we couldn't find out exactly how) to meet the requirements. We were told the system is as simple as having a hundred bolts that needs nuts—and then putting the hundred nuts on the bolts. Very simple, indeed!

Half of Russia's workers are women. They seem to be doing all kinds of jobs, even heavy manual labor. We saw one young woman at the end of a jack-hammer—breaking and loosening concrete on a roadbed. We saw others working on railroad section crews, carrying hod, plastering buildings, pouring concrete runways, and digging sewer ditches.

Yet, we were told that large families are encouraged if they can be properly taken care of. Mothers of large families receive a bonus or monthly stipend of as much as 150 rubles. Another encouragement of family life is the stigma attached to (and the difficulty of obtaining) divorce.

With all the emphasis on the family and the zeal to improve living conditions, Soviet educators pay little attention to home living education. We asked Tenrikh Zelenki, chief of the Central Committee for Vocational and Technical Education, why this was so.

"We are increasing our emphasis and scope of culinary schools," he replied. "We are doing the same with dressmaking schools. Our medical care and hospitalization are free. Our nursery and kindergarten schools are operated on a minimum cost basis. We are encouraging our women to work and to take an active interest in civic and social affairs. With such a pattern of services, there is little need for the mother or wife to have had education in homemaking. There is really very little for her to do in the home."

Nor is business and distributive education what it is in America (understandably, since the government is employer, manufacturer, and distributor).

Business education courses are given scant attention in the ten-year schools, according to our interpreter, although they are offered in some technical schools. Apparently the Russians have less demand for secretaries and stenographers than we have in America although many accountants must be required to take care of the tremendous amount of bookwork which is involved in the Soviet system.

Distributive education hasn't come into its own as yet—or at least its need doesn't seem to be recognized. Everywhere in retail stores large numbers of people wait to be served. We heard that some on-the-job training in selling is provided in larger stores such as GUM in Moscow, but none is offered in the schools.

Half of Russia's labor force is tied down on the 86,000 state and collective farms (compared with 9 percent on farms in the U.S.). While oversupply of most farm products is our problem, undersupply is the chief headache in Russia.

Education of the farm people themselves is on the upgrade; adult education is recognized as important among farmers. Trained farm machinery operators and repairmen receive premium wages or stipends. Instruction in farm machinery care and repair and in irrigation is provided in rural areas by vocational and technical schools comparable to the trade schools and vocational-technical schools in the cities. In addition, the Ministry of Agriculture conducts agronomy schools and livestock production schools for farm youth.

One of Russia's biggest projects is adult vocational education conducted in evening schools. This was in evidence everywhere. The government does not hesitate to spend large sums in this area of education because of its immediate contribution to worker productivity and therefore to Khrushchev's goal of economic supremacy. Fifty million Russians, we were told, attend various kinds of adult education programs. This represents nearly 25 percent of the total population and, if true, is indeed an impressive figure!

SHOULD WE follow Russia's educational procedure as described here? Not if we want to develop students with imagination and initiative who can think for themselves in new and challenging situations. After our visit to the Soviet Union, we vote positively on the side of American education. But let us not be smug!

Vocational training gets more emphasis in the education program in Russia than it does in America. It is being carefully correlated with on-job experience and planned in terms of job needs. We have made recreation an integral part of our secondary education program. Perhaps we should think more seriously of making supervised work experience equally important.

There is much in Russian education that we can emulate and we have the wealth, resources, and know-how to improve our system if we want to. But want to, we must, before it is too late. ●

Closeup on Labor Education

SOMETHING LIKE a million members of U.S. labor unions attend some sort of "school" every year—from apprenticeship training to courses in political science, foreign affairs, and business economics.

It is difficult to arrive at precise figures, for most of this education is conducted at local-union or area levels by local people who, though they may use materials prepared for them by national groups, don't necessarily report to any central point on results and attendance.

Best guesses that can be made, however, break down about this way: Apprentices in training, about 200,000. Journeymen taking advanced courses in their skills, about 100,000. Union members at all levels taking part in summer institutes and weekend and nighttime classes in various subjects, about 700,000.

In some areas—most particularly that of apprenticeship training—the unions shy away from professional educators and even educational institutions where possible. But in the larger area of general education into which they have ventured, the labor people are using a "mix" of instructors that includes the professional educator at the college and university level, as well as other professionals employed by the unions themselves.

The United Auto Workers, for instance, has a staff of forty-five people—most of them with some professional educational background—devoted entirely to education programs. The director of the AFL-CIO's Department of Education, Lawrence Rogin, was a member of the staff of the University of Michigan's extension school.

Labor education divides into two parts: that concerned with general and union welfare, and that concerned with the particular skills and training of union members in their roles as workmen.

In its general programs, labor is making free and even eager use of facilities of universities and colleges; in its apprenticeship programs, it is gradually pulling away from use of local school facilities, in favor of its own buildings or other meeting places.

The general programs key to three aspects: an honest effort to preserve democratic union institutions by insuring that members, and particularly officers, understand parliamentary procedures; the unions' basic purpose of negotiating with management; and the traditional problems of community welfare, ranging from local to national politics.

Some of these programs are very ambitious, such as the recently-announced "National Institute of Labor Education," which will hold three ten-week institutes at Cornell, University of California at Berkeley, and Michigan State next summer. These will be residential courses, offering studies in economics, political science, sociology and psychology, and trade union history and philosophy, plus evening seminars on labor law, defense, civil liberties, and business organization. Attendance is open to any union member, but preferably to full-time union employees. Fees will be paid by the participating unions and scholarships are available to pay half the $8 per day cost of room and board.

Directors of NILE include such educators as L. H. Adolfson, dean of University of Wisconsin's extension division; Ralph Campbell, professor of industrial and labor relations at Cornell; P. L. Garman of the University of Illinois; and George Shuster, president of Hunter College.

Most of the courses, however, are not of such a comprehensive schedule and consist of extension courses at land-grant colleges and universities, mostly conducted for union employees who have reached some rank or position within the union organization itself. Last summer there were more than 150 of these short sessions held at a score of schools. The United Steelworkers Union, for example, held a two-week staff training conference at Pennsylvania in July for representatives of all twenty-nine of the union's districts. Sessions took up changes in the staff man's job, labor legislation, economic problems, and human relations. The conference was run by Myron Joseph, economics professor at Carnegie Institute.

Newest education effort of the labor unions is aimed

at skill improvement: bringing craftsmen up to date on new techniques and materials of industry. Particular leaders in this aspect of union education have been the building trades unions and the metalworking and typographical unions.

Probably the biggest program in this regard is being carried on by the International Brotherhood Of Electrical Workers (IBEW), whose members are now concerned with electronic devices as well as electrical work. These programs are conducted on a purely voluntary basis (very often the workmen themselves pay for the courses) with much of the "teaching" help supplied by manufacturers.

The response is amazing. In Washington, D. C., IBEW recently announced an eighteen-week course (to be conducted at night) in industrial electronics. Membership was limited to the first eighty men who applied, and each man was to pay $20. A total of more than 120 men (out of the local's total 600-odd membership) applied within two days of the announcement.

Most widely known—and again probably least known in detail—are the apprenticeship programs that have long been conducted by most labor organizations. Although some have been attacked on the charge that they are used to limit union membership, these apprenticeship programs are in the main real study courses. They are superintended by the union's director of education and they run anywhere from two to five years.

THE UNIONS insist that they have the only real means of "making a mechanic" (journeyman), because they relate technical knowledge to on-the-job practice under supervision. This is the key, by the way, to their objections to certain provisions of the National Defense Education Act. Courses under the Act are often designed at two-year lengths and are parallel (in classrooms but not on the job) to many of the courses given by the unions. Union leaders argue that boys will go through some of these courses and be led to believe that they are mechanics and can get jobs. "But they won't be acceptable mechanics, and they'll have a hard time getting jobs, because they'll have no practical experience," commented one union educational leader.

Biggest share of the apprentices are in the eighteen trades that constitute the AFL-CIO's Building and Construction Trades Council. According to the U. S. Department of Labor, the construction trades have trained an average of about 100,000 apprentices a year over the past ten years or more. The so-called "metal trades" have had an average of more than 26,000 apprentices in training each year; the printing trades, about 13,000.

These apprenticeship programs are entirely "union made," though often local school facilities are used as classrooms. Teachers are volunteer journeymen who have themselves been trained for this purpose and who receive regular union scale for their efforts. In almost every case, the programs are handled by joint employer-union committees, with both sides contributing to the costs.

In addition, the apprentices themselves earn regular salaries during the years they remain in the program—in some cases earning four days' pay and spending one day in school, in others being paid enough to compensate them for their classroom time.

This could be a typical example: The applicant is 18 years old (top age of his classmates is 25). He has a high school diploma and probably has college-entrance qualifications.

He registers with a local joint committee in his home city, sits out a waiting period that may last several months, is interviewed and, once accepted, is assigned as an apprentice on a job. Here he works under constant supervision of journeymen of his trade.

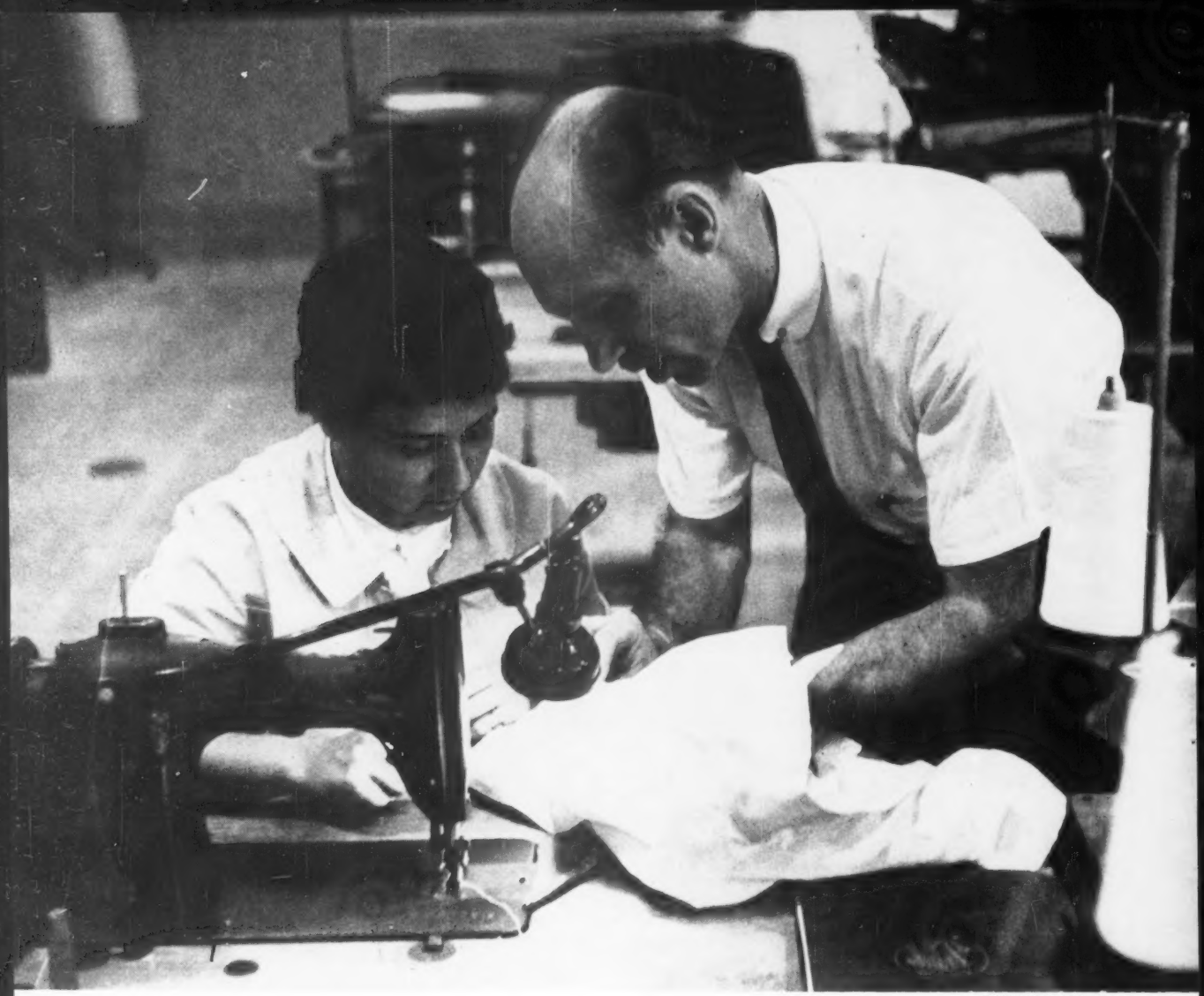
Usually, he is required to attend "school" at least two nights each week. Courses taught include mathematics (in the building trades, a considerable mathematical ability is often required of a journeyman), blueprint reading, and other subjects related to his job. During his apprenticeship, his pay advances (by agreement with employers) from an average of 50 percent of a journeyman's pay to a maximum of about 85 percent.

Graduation may be just that—termination of journeyman status—or it may be accompanied by considerable ceremony. One union in the brick and tile industry even puts on a national contest for its top graduates, climaxes it with an awards dinner in Washington, D. C., to which high government officials are invited—and attend.

As a footnote to this overview of labor education, mention should be made of the college scholarships that labor groups have set up, both for children of their own members and for children of non-union members. AFL-CIO itself now presents six scholarships annually—three to children of union members. Individual unions, of which the Seafarers' Union is one, also present scholarships of this nature. The Oil, Chemical and Atomic Workers Union has begun an annual award of four $2,000 scholarships limited, in this case, to children of union members.

Another tangential educational activity of labor's is its program to inform the general public of the objectives of the labor movement. Example is AFL-CIO's sponsorship of the Peabody-award-winning newscast, *Edward P. Morgan and the News.*

Biggest problem facing labor now is to keep its ranks filled out with trained young men and women. Ewan Clague, U. S. Commissioner of Labor Statistics, predicts that by 1970 there will be a 40 percent increase in the number of young workers in America's labor force (trade magazine *Factory* puts the figure as high as 46 percent). But as the demand for skilled workers increases, the need for unskilled workers will decrease. Here the problems come full circle. The raw fact is that each year seven and a half million youngsters leave school without a high school diploma; two-thirds of them don't even get as far as senior high school. Commissioner Clague allows that we might witness a curious dilemma in the course of the 1960's. "It is possible," he recently told a group of labor and management representatives, "that substantial unemployment will exist side by side with labor shortages." We can expect to see labor education move into high gear as it grapples with this problem. ●



ILGWU photo (Berinsky)

classrooms born of the class struggle

by Gus Tyler

SCRATCH A UNION'S education program and you see its ideals. Worker education in some unions is intended primarily to build rank-and-file loyalty to the organization; in others it is the device for mobilizing opinion for social-political programs; in still others education is the means for grooming a highly skilled officer corps.

Labor education curriculum takes a hundred different forms. Classes are organized to raise workers' skills, to fill the leisure hours of members, to promote fraternity, to guide workers as consumers, and to uncover hidden talents among manual laborers. The education varies because unions differ among themselves on what economic and political role the worker should play.

About the first national union in America with a full-blown education program was the International Ladies' Garment Workers' Union. Worker education in this union sprang from a highly fertile soil, thirsty for knowledge and seeded with talent.

Into the old East Side of New York, from which the expanding garment industry drew its immigrant toilers

for the sweat shops, there came, at the turn of the century, many "teachers" in search of students. These teachers were journalists, preachers, playrights, poets, and revolutionists, escaped from the restrictions and repressions of the Old World, come to the New World to express themselves in an atmosphere of freedom. These were "men of the Book," of ideas, of faith in the human mind. They believed that man could not live by bread alone; but they also discovered that they themselves could not live by the word alone. And so they learned a trade, pushing the needle in garment factories—together with their "people."

Out of this milieu issued a rich intellectual life. Teacher and student assailed The System and devised brave new worlds. They sought lasting underpinnings for their dreams by exploring the philosophies of Rabbi Akiba and Schopenhauer, Spinoza and Dante, Hegel and Marx. They wrote plays and acted in them. They wrote books and passed the hat to print them. They organized unions and political movements and, through these, they organized classes to study man, the system, and—above all—what man *could* be like and what the system *should* be like. In the garment union—and in other unions sprung from the same soil—worker education was the creature of the proletarianized intellectual, sublimating his economic and spiritual frustration in a world of mental movement.

The original and inspired urge of this early worker education—to remold the world nearer to the heart's desire—still underlies most worker education today. There is this difference: whereas the emphasis originally was on the ultimate goal, the present emphasis is on the immediate; whereas the original debate revolved around the philosophic underpinnings of social change, the present debate revolves around the means of social change. The shift is from inspiration to action.

By the 1920's the ILGWU had an educational program operating on a formalized basis. Like the union itself, it was groping toward community integration. A novel feature of this program was its use of university talent for labor education. Top educators came to union headquarters and labor lyceums to lecture workers on history, government, psychology, and economics. Many years later, trade unions were to move onto the campus; but in the early 20's the ILGWU was bringing the campus to the union, and—incidentally—was bridging the gap between the semi-ghettoized immigrant worker and the larger community in which he lived. Some of America's most distinguished teachers were delighted to give time to these classes, not only because they believed in the edification of the common man but because many of them learned at least as much as they taught through their association with people from the shops.

In the early 1930's, the ILGWU was confronted with the first challenge of growth by a flood of new members pouring into the union. These new thousands were called the "NRA babies," the youngsters without understanding of the labor movement beyond immediate benefits. To "involve" these newcomers, the union set up a proliferated program, inspired in large part by the visit of president David Dubinsky to Vienna (then socialist) where he saw gigantic demonstrations of labor culture. Alongside the customary classes, the ILGWU set up a widespread recreational and cultural program: baseball, swimming, social dancing, painting, ceramics, mandolin-playing, and dramatics. Whatever it was that a dozen union members were ready to do together, the union was ready to sponsor—and to give a labor slant. Hikes, outings, picnics, and parties became part of improvised curricula to establish closer social ties between member and union. Locals set up circulating libraries, agitated for music appreciation, and organized visits to museums. In a vast educational push, the union plugged for Proust and Bach right along with pork and beans, or—in the garment industry—for pizza and bagels.

THIS CAME at a time when adult education for working people was still limited and when garment workers were moving from the sixty-hour to the forty-hour and thirty-seven-and-a-half-hour work week. Workers now had leisure time; the union salted their thirst for learning and ILGWU members drank in the activities.

Out of this cauldron of creative activity was distilled a satiric musical, a "song of social significance," called quite appropriately *Pins and Needles*. Conceived as an amateur production, this show moved from the ILGWU's Labor Stage right to neighboring Broadway to become one of the long-run plays of all time. The players toured America, staying abreast of the times with new skits, new songs, and new cast. This musical was worker-education in jazz time, preachment with a patter. To millions of Americans, ILGWU did not stand for protector of the garment workers but for producer of *Pins and Needles*.

As the union continued to expand through the war years and after, new developments demanded new approaches to education. For one thing, the expansion of adult education programs by now gave working people an opportunity to enroll in classes in their own neighborhoods; as a result, union-sponsored classes fell off. Too, the new union members filtered into factories already organized without going through the highly emotional baptism of fire through organization and strike; they tended to view their union as institutional rather than familial, as a business in operation rather than as an army on the march. This meant a change in the quality of the membership, in their relationship with the union, and in the amount of time they naturally sought to spend in union halls. The problem now was how to reach—and "educate"—these new millions.

The ILGWU faced (still does) the typical problems of a large-scale organization: the ABC of the leviathan institution—Anonymity, Bigness, and Complexity. The individual member, whose face and name and sorrows were once known to the union officer, became anonymous, a figure in the crowd—and vice versa. The very size of the union, with its divisions and subdivisions and the upward

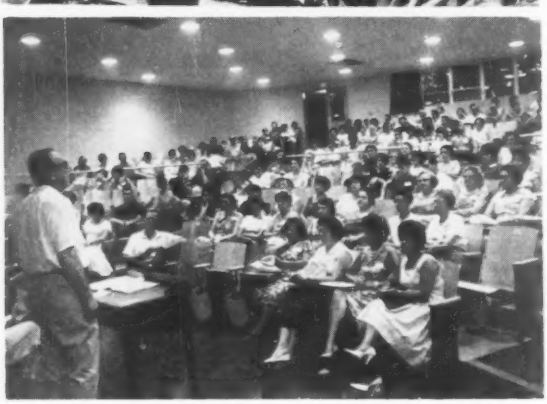
Mr. Tyler is education director for the International Ladies' Garment Workers Union.

and downward transmission of data and policies, introduced the problem of meaningful communication. The proliferation of union functions brought on a level of managerial complexity requiring skilled, professional administrators. To meet these challenges, the ILGWU expanded its educational work in several directions.

The key move was staff training. The first step was an Officer Qualification Course, a constitutional requirement that all those aspiring to elective office in the union go through an extended course preparing them for complex duties. This was followed by the establishment of a Training Institute in 1950, a full-time, one-year school for young men and women—from both within and outside the trade—to prepare them for a career in union staff work. To this was added an intensive Evening Training Institute—a year of night schooling—for union members to build a reservoir for future staff and officer corps and to improve the skills of active rank and filers.

Fundamentally, all these moves toward staff training are intended to create an officer corps that, in the words of one ILGWU vice-president, can act as "teacher, captain, psychologist, and advocate." This means the ability to communicate, to lead in battle, to understand human relations, and to argue a case before employer or public. The whole program is a device to teach the teachers.

Secondarily, the ILGWU conducts institutes for active rank and filers—the unpaid "sergeants" of the organization who serve on executive boards, as shop stewards, and on wage determination committees. The curriculum of these institutes deals with basic grasp of the union's role in industry and society and the special problems on the union's working agenda. Usually conducted in the summer on university campuses, these institutes enlist the talents of both union and college personnel. Many of those attending these institutes have gone through classes for shop stewards, usually a six- to eight-week course, run one evening a week to acquaint these shop functionaries with their responsibilities.



In 1926, knickered intellectual lectured ILGWU *members on "social psychology" at union's Unity House. Now the union borrows a campus for institutes for workers.*

For the new union member, most locals conduct classes either in the form of a talk or film and backed up with handy literature and discussion. These classes vary in length from one evening to eight evenings.

The union press, including a national publication appearing in several languages, local union newspapers, shop bulletins, and booklets on the history and administration of the union, rounds out its effort to inform the rank-and-file member.

WHEREVER POSSIBLE, education is geared to motivate action as well as impart information. Thus, if the union discusses the need for continued organization, the education move will be followed by recruitment of rank-and-file volunteers for organization. A talk and film about the union label will be followed by involvement of members in drives to promote purchase of union-label garments. Discussion of vital legislation will be followed by campaigns to register, vote, collect funds, form election committees, communicate with elected representatives, and organize the community for political action.

In a slight variation on Dewey's dictum, the central theme of worker education is *to learn to do and to do to learn*. Rarely is there a hard line of separation between study and action, classroom and "class struggle," theory and practice.

To carry on this work, the ILGWU relies on a staff of educational directors, about fifty of them scattered across the country. Increasingly, the mission of the director is not to be the fount of wisdom, not to be the oracle, not even to be the teacher. The director is the organizer. He may edit a local publication, draft leaflets, compose a class, organize an outing, assemble a conference, involve his membership in community work, act as liaison in a legislative drive, hire a teacher, recruit for an activity. His success depends less on his own academic background and far more on his ability to administer activities.

While many educational directors look for ideas to the International (home office) Department of Politics, Education, and Training, they are ultimately responsible to their local leadership and must depend upon their own resources to devise meaningful programs.

In this evolution of the ILGWU educational program, the gear to bigness has not ruled out old methods. The development has been a constant expansion, grafting the new onto the old, holding the straight teacher-to-member relation, while elaborating a system for overcoming the anonymity and complexity of a modern mass institution. The ultimate object of this program is still to make the working man the master of his economic, political, and social fate. ●

NEW YORK BUILDS AN ETV CENTER

by Sol Cornberg

Here's how a designer and a school board planned a million-dollar facility

FOUR YEARS ago, the New York City Board of Education authorized the building of a television production center. Before long the Board found out what more and more educators have yet to learn: a television facility requires more than brick and mortar specifications. It demands educational specifications around which not only the structure but also the electrical, electronic, and mechanical equipment must be designed.

As a result, our firm was called in to act as consultant to the Board and to give the architect necessary information for the design, construction, installation, and operation of the television facility.

A suitable location was found: the George Westinghouse Vocational and Technical High School in downtown Brooklyn adjacent to the New York City Community College of Arts and Sciences. The plant was to be a complete center which would make available to the city's schools all phases of educational television production from script writing to videotape recording. It was to cost $1 million and be ready for operation in 1962.

Our first job was to sit down with members of the Board of Education and educate each other. They had to spell out for us what they wanted television to do in education; we to show them how television could do it.

We pointed out to the Board that an educational television facility may take one of three forms, or any combination of these three, and asked them to tell us which of these would best serve their educational needs. The three forms are:

1. *Closed-circuit,* which permits live, film, and videotape program information to be distributed from a point of origin by means of a coaxial cable directly and privately to one or more viewing points (TV receivers or monitors) located in the same room, building, or complex of buildings. The point of program origin can be any classroom, assembly hall, office, gymnasium, or any space specifically set aside as a studio.

2. *A television station,* which differs from closed-circuit in the kind and degree of program information it can transmit merely in that its domain is public and open rather than private and closed. The on-the-air facility can be received on its designated channel in the home as well as in the classroom.

3. *A program production center,* which permits program information to be manufactured for both closed-circuit and on-the-air facilities either live for simultaneous distribution or recorded on videotape, kinescope, or film for subsequent distribution.

Given these possible forms for their television facility, the New York City educators then set about exploring their educational intentions. Was their purpose to train students for technical, production, and administrative careers in television? Or was the facility to be exclusively a source (a factory) to supply educational programming? Or both? Would the plant operate with professionals or faculty and students? (A very important determinant in selecting the operating equipment.) Or, again, both?

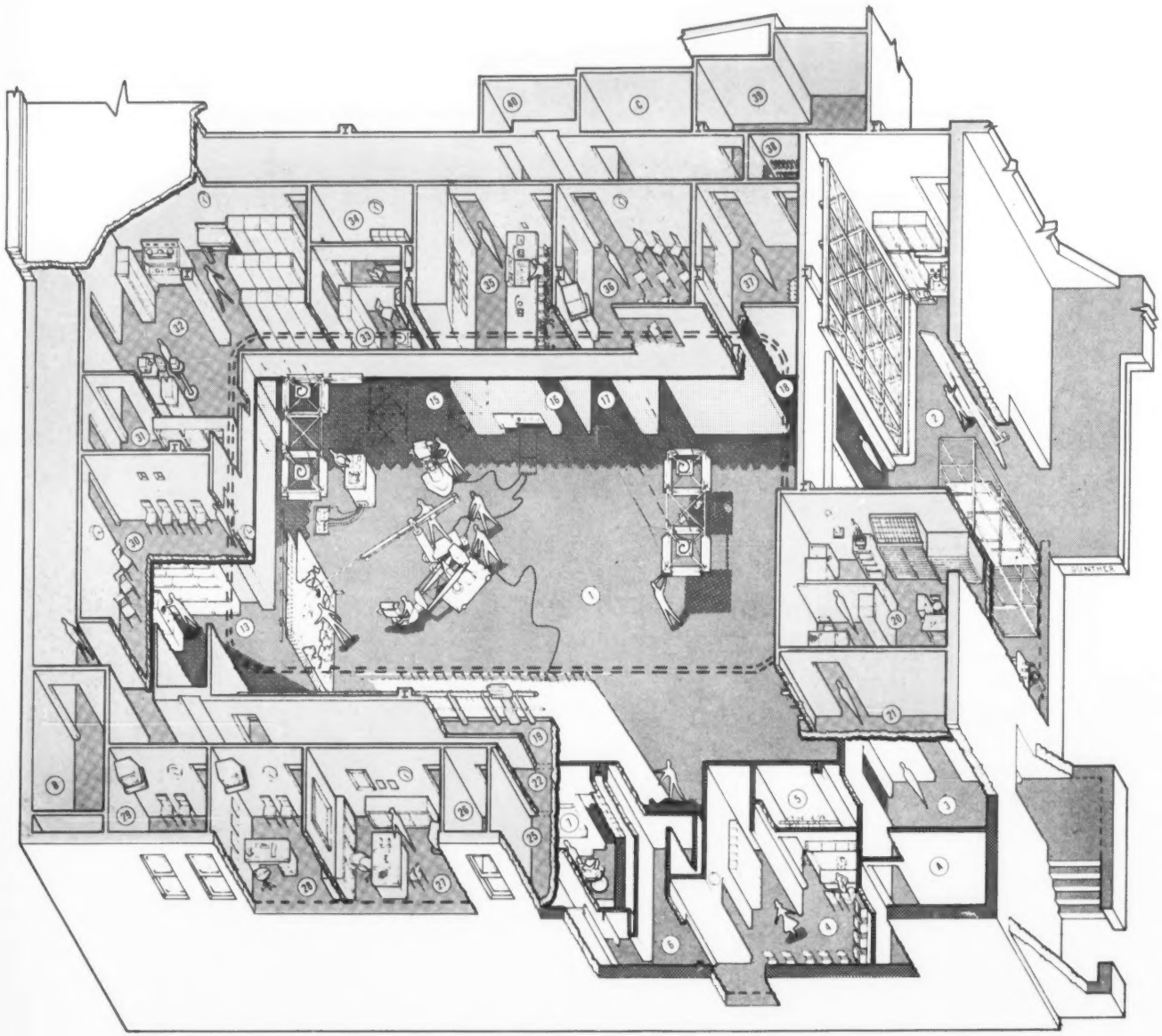
After much study and deliberation, the Board decided on form three, a program production center. They concluded that this form can be the most inclusive and versatile and, therefore, the most economical, efficient, and effective. It can make program material for the other two forms—closed-circuit and a station—and, at the same time, serve as a student training center, allowing for both professional and faculty-student operation.

In addition, the Board asked us to provide them, as best we could, with a plant that would flex with both the inevitable advances in television technology and undoubted improvements in the educational schema.

The architect, after designing the envelope of the building, conforming to existing and new construction, voluntarily acceded to us the responsibility of dealing with such a highly specialized interior.

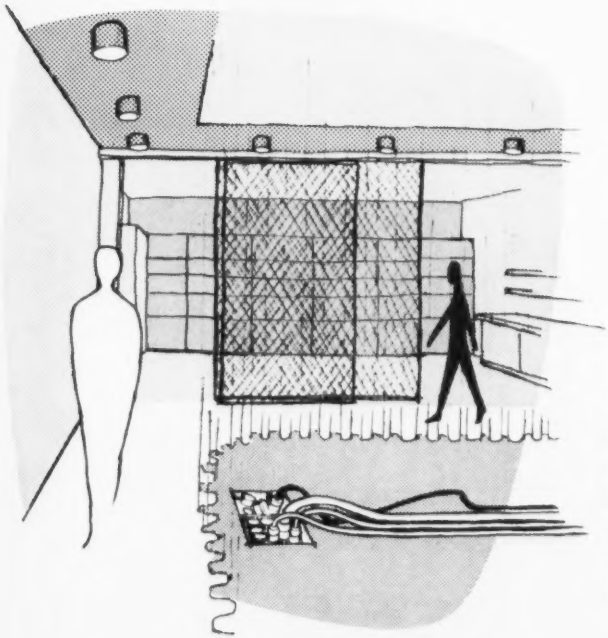
We began our task with only two known frames of

Mr. Cornberg is president of Sol Cornberg Associates, Inc., specialists in television facilities. A former studio planning director with NBC, he also designed the retractable studio-theatre for ABC and Television City for Granada-TV in London and advised on communications installation for the Columbia University Law School.

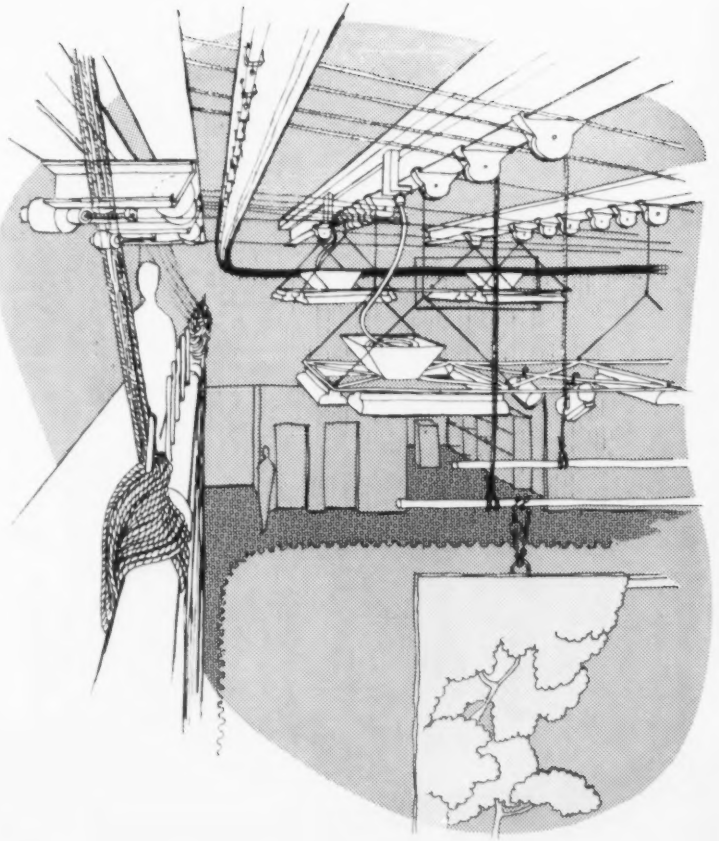


Key to studio layout

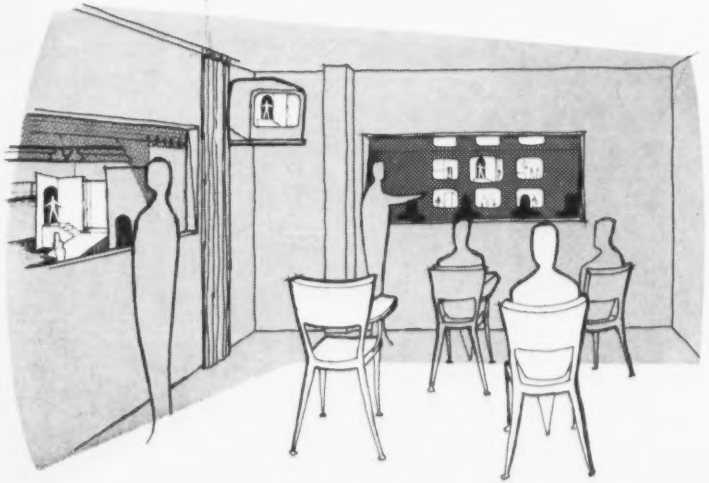
1. studio
2. scenic shop
3. lobby
4. women's dressing room
5. wardrobe
6. toilet
7. make-up room
(not shown: toilet, men's dressing room, wardrobes, rehearsal room)
13. electrical storage & maintenance
14. public toilets
15. electrical storage & maintenance
16. drapery
17. hand props
18. furniture & props
19. fly gallery
20. graphics, design & shop office
21. reception
22. corridor
(not shown: secretaries' and administrative offices)
25. 26. toilets
27. administrative
28. 29. productions
30. projection, observation & rehearsal
31. film library
32. film chain, videotape & electronic racks
33. audio control
34. video control
35. director & control
36. observation, rehearsal & conference
37. lighting control
38. remote ballasts
39. storage
40. toilets
A. B. C. stair wells



At one end of studio floor (shown between 13 & 15 in above plan) is a mechanical post set into floor which supplies water, compressed air, electricity, and drainage for televising chemistry, ceramics, etc., demonstrations—eliminating costly run of hoses and wires into studio.



Scenery and drapery are positioned from fly gallery (19 in plan). Studio lighting is designed in sections that can be raised and lowered automatically. Note peripheral track which holds a cyclorama and scrim.



Students in observation-rehearsal room (36 above) can look through glass panels onto studio floor to watch camera work and into control room to follow monitoring and mixing operations and lighting setups.

reference: the cubic area we had to work within (the two-story interior measured some 300,000 cubic feet) and the budget (an appropriation of $1 million of which $400,000 would be available for equipment). Within this allotted sum and space we determined the design requirements relative to size, shape, function, traffic flow, and relationships of all equipment.

We will, once the construction phase is completed, participate further on a consulting basis, first with equipment installation and check-out, next with orienting personnel to the mastery of equipment and plant.

In arriving at our overall concept of the center, we coupled the accumulation of past experience in commercial television plant planning with an "educated" projection of the New York Board's educational needs. As a result, the television center is provided with several features unique for an educational facility.

The city building code rightfully requires a fire walk at least three feet wide between all scenery and the outside studio wall. We wanted to win back this more than 1,000 square feet of invaluable production-space insurance to the studio. While still complying with the fire laws, this was done by designing the second floor so that it cantilevered over the access corridor to all auxiliary spaces around the studio and placing the opaqued studio cyclorama at the face of the second story wall.

Two mechanical stations are imbedded in the studio floor. These stations have connect-disconnect couplings for supply of hot-and-cold water, drainage, gas, air, and electrical services. They give the studio laboratory facilities for courses in physics, chemistry, home economics, horticulture, etc., without having to run hoses and wires into the studio (with attendant high labor costs).

THE FLY gallery, to which there is easy access from the second floor, forms the overhang on one long side of the studio. From this uncluttered vantage point, scenery and drapery can be raised and lowered manually. We have made provisions for this to be done electrically, should the money become available. All lighting equipment will be raised (to top position) and lowered (to head height above studio floor) from the fly gallery. We have also included a double peripheral track so that it will be possible, when special effects require it, to hang both a cyclorama and a scrim.

Improvements in both image orthicon and vidicon cameras are constantly reducing the amount of light needed to transmit an adequate picture. The center's lighting system, designed for greatest flexibility, is divided into quarter sections and the light fixtures so placed that each quarter section can be lighted separately or in combination. To augment this minimum lighting and to allow for sophisticated lighting effects, when time and talent are available for them, we have provided for permanently hung "power-groove chandeliers" to which additional fixtures may be clamped.

To support the teaching of television production techniques, we have created two multi-purpose rooms on the second floor. One is located next to the film projection room (see number 30 in plan) and can be used by student and production personnel as a viewing room for film and television and as rehearsal space. But it also can double as a classroom-in-the-field, where students can observe the activity in the projection room as well as have a direct view through a glass wall into the studio proper.

The second of these rooms (shown in sketch), is a combination rehearsal and observation room. Through one glass wall, students can look into the control room, practically over the director's shoulder, and observe the nerve-center activity therein, as well as program activity on the bank of monitors. Through a second glass wall they can see and observe the lighting switchboard. A third glass wall looks down into the studio.

It will be possible in both of these rooms to discuss procedures and be instructed about them without interfering with studio activity. The students will have the added advantage of immediacy—learning a technique as it is being applied under "live" conditions.

It is also significant to mention that in designing and assigning the kind of equipment to be initially installed for its opening in 1962, we were aware of the special requirements of the center, primarily the almost certain need for expansion. We designated two live cameras, a 16 mm film chain, and a videotape recording and playback machine. However, we made certain that the control consoles, conduits, and trenches were large enough to take two more live cameras, a second film chain, and three additional videotape machines.

To be sure, electronically, electrically, and mechanically the television center will be a self-sufficient operation. However, it is our contention that the center is more than a housing and storage depository for technical equipment and facilities. It is more than a plant for manufacturing television programs or a laboratory for teaching television. The center, more than anything else, is a resource of learning into which dedicated people can come together to fulfill a common mission: to supply the best quality television for education.

While quality television production is the province of the professionally-trained craftsman, it is not his exclusively, especially not in the educational field. There is no mystique in learning television skills. Within the New York City school system—and, indeed, in almost every school system in the country—there is an untapped potential of manpower and talent available for educational television production. The art teacher can apply his art and become the scene designer. So, too, can the shop instructor become the carpenter, the sewing teacher the wardrobe mistress, the English teacher the script editor.

Our function in designing the television center is to give to the New York City Board of Education a facility with the capabilities and environment for attaining the best quality of television for education. When the board takes over in 1962, *quality, television,* and *education* will be in their hands. We have supplied the tools; they must fashion the product. For regardless of the size of an education system, and whether it spends a thousand dollars or a million for education via television, responsibility for determining how the facility is to be used is, and must always be, the educators'. ●

Deadlines and Dialectic

Out of the need to inform its members, education has spawned a vast publishing industry of its own

THE EDUCATOR who wants to keep abreast of "everything that's going on in education" can do just that by getting on the mailing list of 2,000 periodicals. That's the number of educational journals and bulletins published in the United States each year.

Out of education's need to communicate within itself —reporting fact and airing opinion—has grown a vast publishing industry. In fact, it's a safe estimate that education absorbs more printer's ink than any other field.

From weeklies to quarterlies, they range from national periodicals like *School and Society* (Society for the Advancement of Education, Inc.), to state association journals like *Alaska Teacher* (Alaska Education Assoc.), to journals of regional professional groups like *The Spokesman* (Indiana Classroom Teachers Assoc.), to board of education journals like the *Baltimore Bulletin of Education,* to organs for local associations like *The Bull Slinger* (Cowley, Wyo., Classroom Teachers Assoc.), to state department of education newsletter like *Maine Schools,* to specialty magazines like *Rural Sociology* (Rural Sociological Society, Cornell) and *The Jewish Audio-Visual Review* (National Council on Jewish Audio-Visual Materials).

Logically, there are periodicals edited for the editors of these periodicals, like *Edpress News Letter* (Educational Press Assoc. of America) and *Education Reporter* (Education Writers Assoc.).

Total circulation of all these periodicals runs well into the millions.

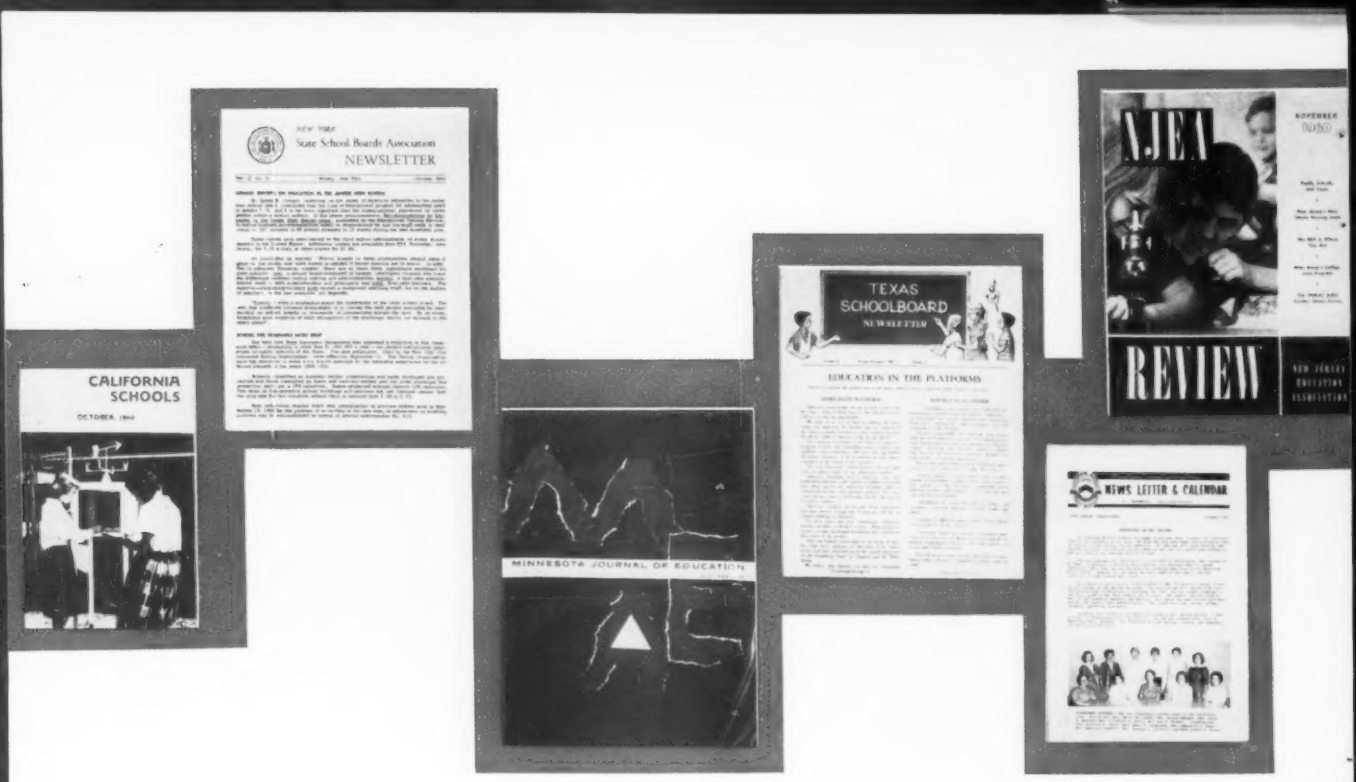
While this segment of the nation's publishing business is non-profit, some of these journals carry advertising to help defray costs. Others are financed out of professional membership dues or out of school and college publications budgets.

Largest magazine specie in terms of total circulation is the state teachers journal. Issued as organs of the state education associations, these magazines reach a combined readership of one and a quarter million. Even here the pattern varies. Nevada's *NSEA News Letter* is issued three times a year and its 2,000 readers receive it at no cost, while the 20,000 subscribers to *Alabama School Journal* pay $4 for nine issues. Only *Texas Outlook* continues publication through the summer.

Most state teachers journals carry advertising at rates that vary everywhere from $2.50 per inch in *Wyoming Education News* (circulation: 4,008) to $25 per inch in California's *CTA Journal* (circulation: 104,563). Advertisers can make simultaneous insertions in all the state teachers magazines through the State Teachers Assoc., Chicago. Full-page rate: $6,257.

Except for a few across-the-board periodicals, most of America's education press splits into precisely defined reader groups. These may be held together by the subject they teach, the kind of school or department they administer, or the state or region in which they work.

There are seventy periodicals that deal with educational administration, for example, according to *America's Educational Press.* They range from regional cover-



age, like *Administrator's Notebook* (Midwest Administration Center, U. of Chicago), to state journals, like *The Bulletin of Pennsylvania State School Directors Association,* and the *Illinois School Board Journal,* to magazines circulated nationally and abroad, like *School Business Affairs* (Assoc. of School Business Officers of the U. S. and Canada).

Whatever the educator's field or specialty, he can find an abundance of periodicals edited to give him professional help and to inform him of developments within his field.

If his field is guidance, he can choose from a score of journals, such as *Circuit Rider* (National Assoc. of Guidance Supervisors and Counselor Trainers), the International Assoc. of Pupil Personnel Workers' *Journal,* and the American Personnel and Guidance Association's *Vocational Guidance Quarterly.* Interestingly, nearly half of the guidance publications were launched in the 1950's.

THE LANGUAGE teacher, in turn, can choose from fifty magazines, from the general (*Language,* Linguistic Society of America, or *Modern Language Journal,* American Federation of Modern Language Teachers Assoc.) to the specific (*French Review,* American Association of Teachers of French, or *Slavic and East European Journal,* American Assoc. of Teachers of Slavic and East European Languages). Sixteen state or area associations publish a language journal, such as the Modern Foreign Language Association of Virginia's *MFLA Newsletter* and the South Central Modern Language Association's *South Central Bulletin.* Colleges and universities also feed this area: University of North Carolina's *Studies in Philology* and Brown University's *Rhode Island Foreign Language Gazette* to name two.

Essentially, the industry comes down to 2,000 individual operations that vary in control as much as they vary in output—which is everything from a mimeographed sheet cranked out every Thursday to thick magazines printed on 60-lb. coated stock that thread their way through letterpresses on the first of each month.

Example at one end of the spectrum is the *NEA Journal,* circulated to 700,000 NEA members and familiar to most OVERVIEW readers.

In planning a year's issues of the *NEA Journal,* editor Mildred Fenner and her staff hold some fifty conferences with educators. Out of the suggestions they make, the staff chooses the most vital topics to cover during the year, studies the writings of proposed authors, and solicits articles. When copy is edited and titled, an artist plans the layout and art treatment. Describing the *Journal's* operation, its senior assistant editor, Walter Graves, says: "Though we start planning a year ahead and start production on each issue two months before the date of issue, things go right on happening in Congress, and in schools all over the country—and we must keep each month's content up-to-date until the big 64-page Goss rotary presses start to roll."

At the other end of the spectrum is *The Superintendent Reports,* a news brief put out by the Santa Monica, California, School District.

The Superintendent Reports is a one-page news brief of school board business distributed to all school employees in Santa Monica the day after each board meeting. Prior to each meeting, the agenda is scanned by the school's coordinator of information services and publications. Agenda in hand, a school representative sits in on the public meeting and takes notes. Actions of the board are written up and items are briefed to fit a single page. Next morning, the department of information services types the news on paper masters for production

on an offset press. These sheets are printed and packaged for delivery in the noon school mail. In this way the staff is informed of school business before it is reported in the local evening newspaper. Santa Monica superintendent Glen Goodwill says his bulletin "does not pretend to cover everything, but it does a lot to inform our staff on important issues."

Mildred Burcham, editor of *Education News* (Oregon Education Department) isolated the field of state education agency newsletters for a depth study of this area of educational publishing. She found some common problems and patterns among her colleagues that have relevance for other newsletter or news bulletin editors.

Majority of newsletters are printed by letterpress or photo-offset and run to thirty-two pages, an economical size in terms of paper stock and print run. They achieve variety in appearance with illustrations—halftones, line cuts, cartoons, graphs—and the use of a second color in the print run or by printing in black on colored stock.

THOSE PRODUCED by multilith or mimeograph are generally shorter, running from two to sixteen pages. While these are not as "slick" as the letterpress or photo-offset numbers, they have the edge on timeliness because they can be run off and put into circulation more quickly.

Mrs. Burcham's study of newsletter content indicated that the editors work with about seven category folders: *announcements* (staff changes, meetings, conferences, workshops, contests, student scholarships); *curriculum* (projects, subject area methods, techniques); *state activities* (state board, chief state school officer, state department of education); *in-service and professional growth* (teachers, administrators); *educational topics* (statewide and national); *conference follow-ups;* and *personalities.* Most of these topics are reported in the form of news rather than interpretation, opinion writing being confined to signed columns.

Surprisingly perhaps, the people who put out newsletters are generally editors first and educators second. That is, they bring a public relations orientation to their jobs. However, most of the editors have had training and/or experience in both journalism and education.

Only one newsletter editor in six devotes his full time to this job. This means that in between other public relations and publicity assignments he must (1) plan each issue's content, sometimes on his own, but usually with an assist from the chief state school officer or the newsletter's editorial board; (2) gather copy, by interviewing staff members and combing news releases, professional magazines, and other newsletters; (3) obtain art work or illustrations, either from readers or other magazines—his budget can rarely afford a professional artist or photographer.

While these newsletters are designed primarily to inform educators in administrative positions, some states also include classroom teachers on their mailing lists or reach them by sending copies to school libraries. Some also mail to colleges and universities, school boards, newspapers, and public libraries.

Most states mail their newsletters directly to individual readers, though it is the practice in ten states to mail directly to selected readers and to bulk-mail the balance to persons responsible for distribution. (The latter system is not recommended because it delays delivery.)

While no educator could hope to look at everything that is published periodically on education (or would want to, for that matter), there is one aspect of this vast publishing enterprise that may be cheerful to contemplate: for the man who wants to get his ideas into print, there are 2,000 opportunities. ●

The School & College Living Room

HANDSOMELY APPOINTED teachers' rooms, tutorial dens, student lounges, considered "wasteful luxuries" a generation ago, are now drawn into plant designs as a matter of course. These areas discourage both students and faculties from fleeing the campus at the earliest moment, but they may give the custodial staff unusual "living room" maintenance problems like how to remove coffee-cup rings from a walnut coffee table.

For the administrator, business manager, or plant manager who is responsible for these areas and their furnishings, here are some tips for a good environment at reasonable cost.

Vinyl Upholstery. For easy maintenance, vinyl rates high. Professionals suggest this cleaning procedure:

1. Wipe the furniture clean with a dry cloth.
2. Remove cushions and wash all surfaces with mild soap and lukewarm water. A neutral synthetic detergent with an additive to increase soil emulsification may be used instead of soap.
3. Sponge off the lather with clear water.
4. Wipe the surface dry with a clean towel.
5. Apply a thin coat of furniture wax.

Saans photo

Decorated spaces, like this student union at the University of Utah, require special "home furniture" maintenance.

Never use carbon tetrachloride cleaners, ammonia, solvents such as acetone or nail polish remover, or abrasive cleaners. These will dissolve or discolor vinyl.

Chewing gum, tars, paint, and shoe polish spots can be removed by kerosene, gasoline, or naptha—sparingly used.

Hydrogen peroxide will remove sulphide stains caused by eggs, "cold wave" hair solutions, and stubborn ballpoint ink. Place a cloth over the spotted area and pour a liberal amount of 6 percent hydrogen peroxide onto the cloth, allowing it to remain for an hour to overnight if it's really stubborn. Don't let the peroxide touch stained or lacquered wood, or seep into the seams.

Stains which don't respond to any other treatment may sometimes be removed by exposure to direct sunlight for two or three days.

Leather Upholstery. Use the cleaning procedure for vinyl—with these differences:

Most experts recommend a mild soap rather than detergent. Wash from the bottom up, since cleaning solution dripping on dry leather may stain it.

Most new upholstery leather has a glaze protective finish. It should therefore *not* be covered with a protective wax until the finish begins to crack.

Fabric Upholstery. A water-base synthetic detergent is generally recommended. Metallic yarns, however, can be damaged by the acids and alkalis in some cleaners. If the fabric contains metallic thread, test the cleaning agent on a part that doesn't show.

Check also for colorfastness. Hold a piece of water-moistened tissue against the fabric. If no color comes off after five minutes, it's colorfast.

Test fabric for shrinkage by cleaning and drying one cushion cover first.

If the fabric passes these tests, approved "wet" cleaning procedure is:

1. Vacuum the piece thoroughly, getting the dirt out of all seams and corners.
2. Apply the *foam* from a water-base synthetic detergent. Use a large, natural sponge and clean about a square foot at a time.
3. Rinse off foam with clean sponge and water. A small amount of acetic acid added to the rinse will help retard color-bleeding.
4. On badly soiled areas, use a commercial oil emulsifying spotting agent, lathering the fabric with a soft brush. When clean, sponge the area with detergent foam and rinse off.

Wood Furniture. Wood surfaces and frames can be cleaned with a cream furniture polish, following the manufacturer's directions. Don't use polish on waxed surfaces. If the wood becomes scarred or stained, here are some professional maintenance tips:

For water marks, alcohol, and coffee-cup rings, mix

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Maintenance (continued)

finely powdered pumice with just enough boiled linseed oil to make a medium-thick paste. Apply with a soft, clean cloth, rubbing gently with a circular motion. Remove the paste frequently with a turpentine-dampened cloth to see if the spot has been removed. If this doesn't work, dip the tip of a finger in mineral or machine oil, then into either table salt or cigar ash. Rub gently until scar disappears.

For deep dents and scratches, stick shellac is best. Available at most paint stores, it comes in colors to match almost any finish. Melt the stick with a soldering iron just hot enough to cause drops to fall into the nick. Then, smooth the filling with a slightly heated metal spatula. After five or six hours, smooth the spot with a felt pad dipped in a thick mixture of gasoline and pumice and wrapped around a wood block.

Here are two types of finishes highly recommended for protecting unstained and freshly sanded wood furniture.

Wax Finish. Apply several coats of thinned orange shellac. After twenty-four hours, apply a heavy coat of paste wax and rub it in after an hour with a piece of thick felt or flannel wrapped around a block of wood. Use long strokes and rub in the direction of the grain. Give a second, thinner coat forty-eight hours later and rub this in after an hour. Repeat the process three of four times for a highly resistant finish.

Linseed Oil Finish. Make a mixture of two-thirds boiled linseed oil to one-third turpentine. Apply a heavy coat with cloth or brush and rub in with a clean cloth. After several hours, wipe off the surplus and rub with a fabric-wrapped block until the oil is absorbed. In four or five days, apply a second coat and rub again. Repeat the process until no more oil is absorbed. After this, the furniture will need only an occasional rubbing to become glossy again.

Plastic Wall Coverings. Most stains are removed by just a wash with a damp cloth swished in soap or detergent. Fine steel wool will remove stubborn stains on homogeneous vinyl tiles. Particularly stubborn stains on high-pressure melamine (usually bonded to plywood, hardboard, or pulpboard) may be cleaned with benzol or alcohol; avoid alkalies or gritty cleaners. Urethane foam should be washed with dry suds or cleaned with the upholstery nozzle of a vacuum cleaner.

Draperies. Draperies and fabric coverings that are stained or discolored should be redyed unless they are badly worn. Since nearly all color is stripped from material in the dyeing process it is possible to redye the fabric a lighter color. Light brown, rust, avocado green, royal blue, and dark gray can be readily obtained from darker greens, reds, blues, and browns. Redye to a darker color is recommended for patterned fabrics.

One caution: bleach and chemical stains cannot be covered by redyeing. Some chemical stains on white or faded materials may be almost invisible and become apparent only after redyeing. ●

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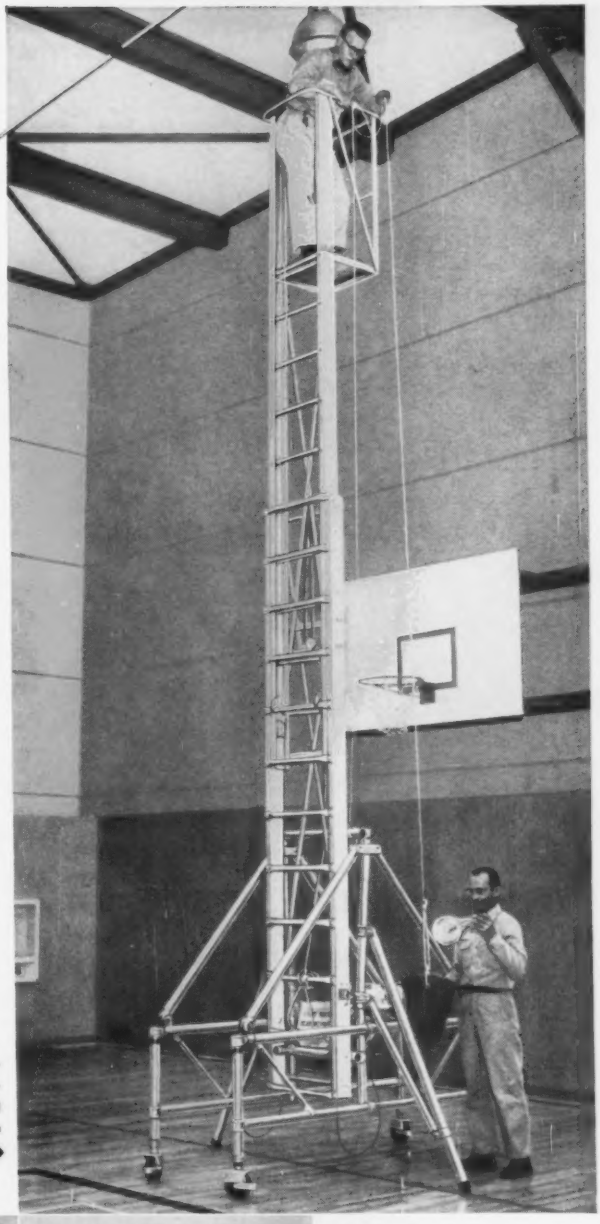

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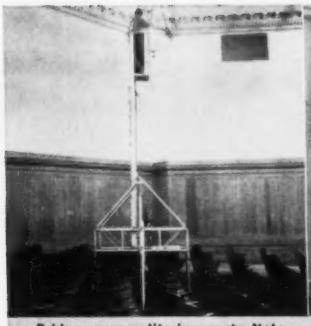

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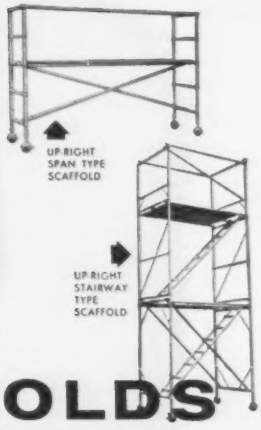

For TALLESCOPE circular write to

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DEPT. 172, 1013 PARDEE, BERKELEY, CALIF.

In Canada: Up-Right Scaffolds Ltd., 120 Russett Ave., Oshawa, Ontario

PLANT NEWS

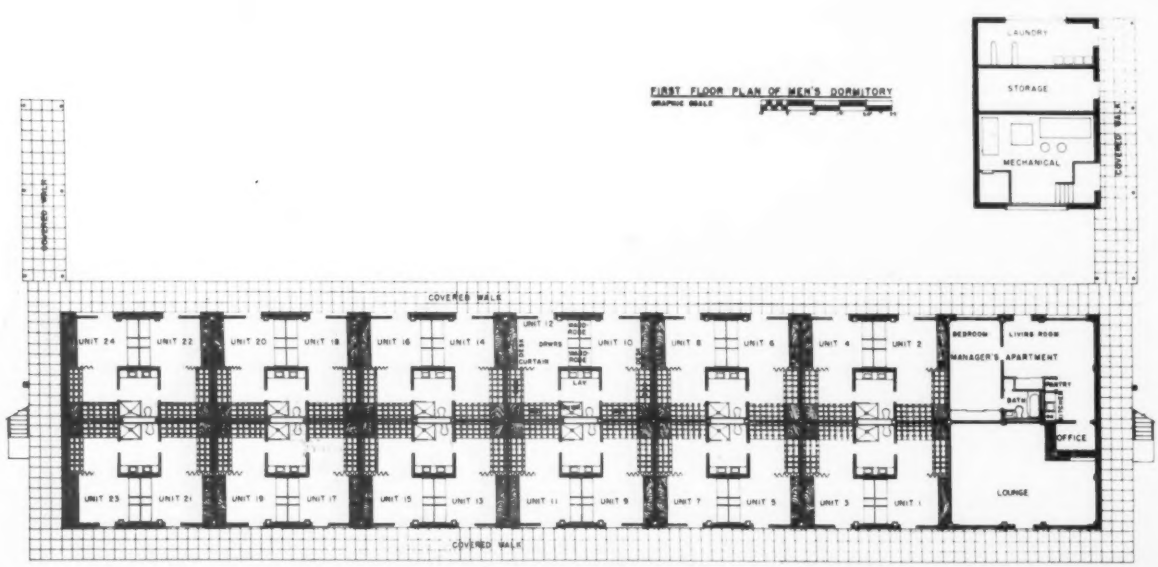
Junior College Dorms

Junior colleges do not usually include dormitories among their plant facilities, but growing enrollments have compelled some of them to construct living quarters for out-of-town students. Howard County Junior College, in Big Spring, Texas, is a case in point. Begun in 1948, the college has expanded its facilities to serve a steadily growing enrollment, the latest addition being two dormitories—one for 52 women, costing $195,000, the other for 104 men, at $316,000. Local architects Puckett & French designed both buildings.

Basic floor plan in the women's dorm is a central corridor with four-student living units on either side. (This layout allows close supervision which was deemed essential.) Wardrobes are placed in the center of each unit and curtains can be drawn to separate the sleeping area from the study area. Each unit has a toilet facility. A fan-coil air-conditioning unit is placed over the wardrobes to give individual room control.

The men's dorm has no center corridor. Instead, back-to-back units, serving two students each, open directly to the outdoors or, on the second floor, to a covered passageway (see plan below). Purpose of this layout is to reduce noise and congestion usually found in a central corridor. One toilet and air conditioner serves two units (four students).

Both buildings are two-story concrete frame with concrete floors and roofs. Exterior walls are face brick with masonry back-up. Concrete overhangs reduce amount of direct sunlight on glass and walls—a necessity for the air-conditioned structures. Mechanical system, laundry, and storage are located in a separate building. Covered walks at the ends of these dorms can be extended to connect to future units. ●



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OVERVIEW

Circle **OV-174** on reply card, last page

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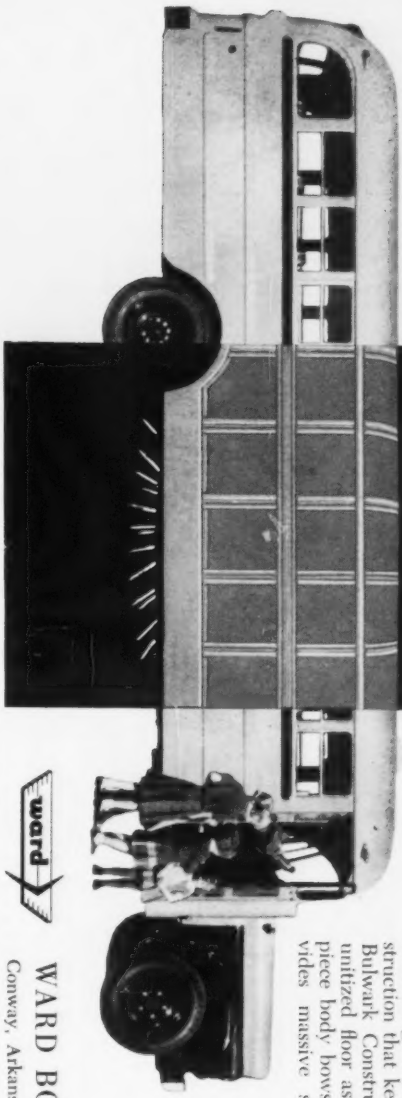

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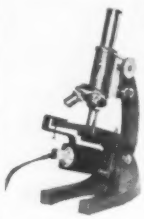

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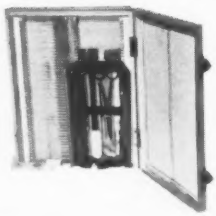

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For more information circle OV-140 on last page or write directly to: **D. W. Hodges, Bioscope Mfg. Co., Box 1492, Tulsa, Oklahoma.**

Endowed Chairs for Amherst High School

A LIFELONG pleader of humanitarian causes, Robert Frost has often urged that American high school teachers be not only better paid but accorded greater recognition in their communities. As one method, the poet has suggested the establishment of teaching chairs in public high schools similar to those in colleges. In his eighty-sixth year, Frost's proposal bore fruit.

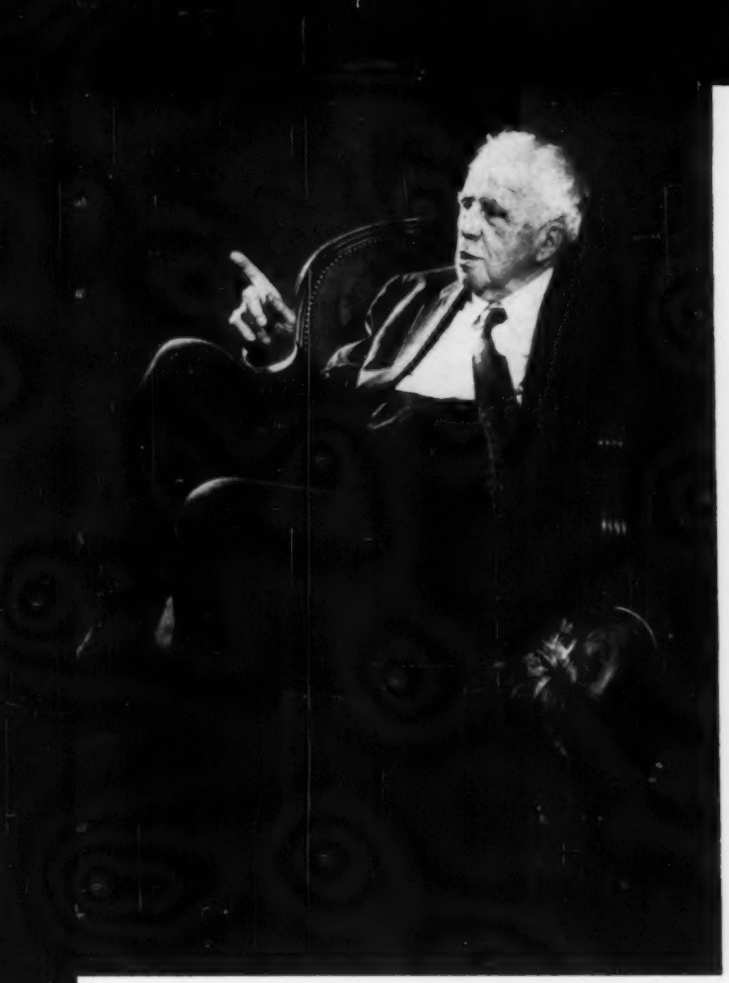
Response to his plea came from Amherst, Massachusetts, where a group of citizens endowed the first of three teaching chairs at Amherst Regional High School—and named them for Robert Frost, a former resident of the town and once a student at Amherst College. He is now honorary consultant in the humanities to the Library of Congress.

The poet himself attended the ceremony at which a veteran teacher of chemistry, Arthur Swift, was honored by appointment to the Frost Chair. Swift, who has been teaching chemistry and science for thirty-seven years—twenty-six of them at Amherst High, was cited by his principal as an "extraordinarily fine teacher of adolescents, always showing compassion and pride in his work, as well as great ability in teaching subject matter."

Appointment to the Chair will eventually mean $1,000 to $2,000 a year in addition to the teacher's regular salary. While a teacher can be reappointed, Amherst's endowment plan stipulates that no one may hold a chair for more than three years in any five-year period. The group of citizens who raised the endowment fund, $20,000 to date, is headed by Minot Grose, business manager of Amherst College. They plan to raise enough to endow two more chairs.

R. H. Barrett

Poet and Arthur Swift, first named to the Frost Chair.



Karsh, Ottawa

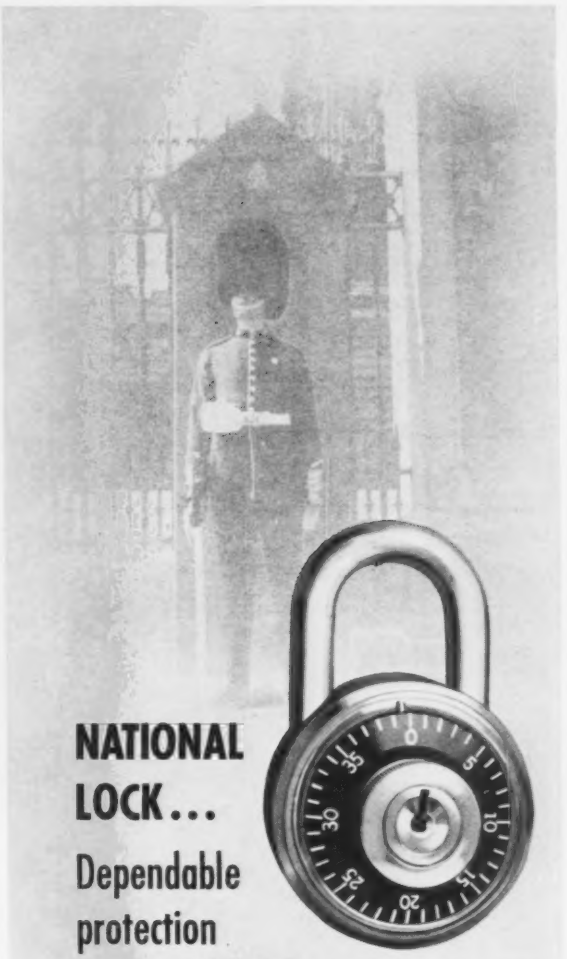
Robert Frost: "I'm glad it's local. I like things local."

Asked about the establishment of a teaching chair in his name, Frost replied, "I'm glad it's local. I like things local, not spreading out too far so they're lost in the distance. The award is going to a man who's lived and taught here all his life."

Shortly before he acknowledged the tribute paid him in Amherst, Frost was in Washington championing another cause: the creation of a National Academy of Culture to stimulate public interest in the fine arts and to encourage and honor excellence. He appeared there before a Senate sub-committee to testify on a bill to create the academy. In his soft-voiced testimony before the Senators, Frost made some pithy observations. Among them: "Take the high schools that I am after; I think they are a little downhill lately. They need not speeding up or hardening up. They need toning up a little. That's the spirit of my life, toning things up a little. That's what poetry is about. Toning us up. Poetry is tone."

Frost was in Washington again in January, not to plead for the artist or the teacher but to lend "tone" to the inauguration for which President Kennedy named him Inaugural Poet Laureate. And last fall President Eisenhower signed a bill authorizing the award to Frost of a $2,500 gold medal. But, happily for artists and teachers, the venerable and much-lauded poet believes that, like the man in his most famous poem, he still has miles to go before he sleeps. ●

Circle **OV-141** on reply card, last page



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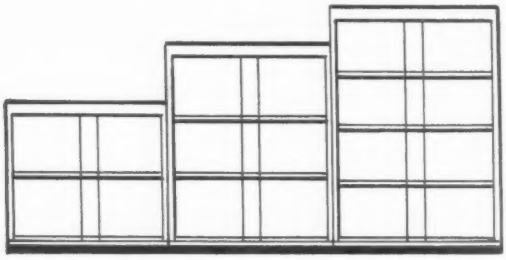

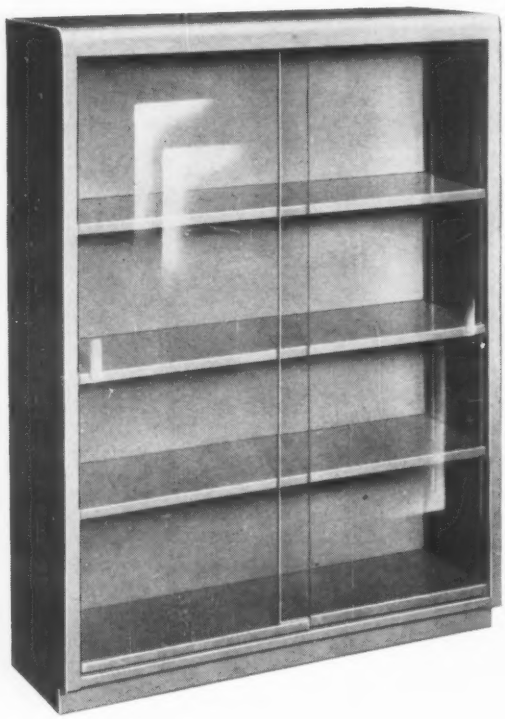

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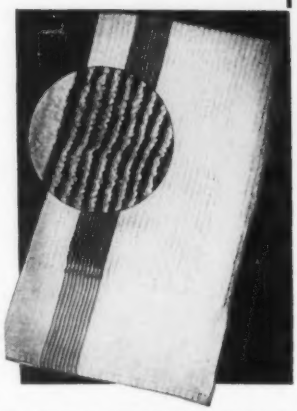

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EXECUTIVE'S BOOKSHELF

EDUCATION IN THE NATION'S SERVICE

Published in cooperation with The Woodrow Wilson Foundation by Frederick A. Praeger, Inc., New York. 193 pp. $4.75.

August Heckscher, president of the foundation, commissioned eight essays by eminent American educators and writers (Jacques Barzun, McGeorge Bundy, Harry D. Gideonse, Robert F. Goheen, John Hersey, Archibald MacLeish, William Lee Miller, and Logan Wilson) as part of the foundation's program focusing attention on President Wilson's philosophy of "Education in the Nation's Service."

The choice of authors assures the value of the book. They range over a wide field and share only background of familiarity with and respect for Woodrow Wilson's ideas and the capacity for articulate interpretation of the issues in education as they are affected by the national interest.

TUTOR TEXT: THE ELEMENTS OF BRIDGE

By Charles H. Goren. New York: Doubleday & Co. Inc. 420 pp. $3.95.

The "scrambled" text is a new and fascinating development in the field of "self-instruction." Doubleday has published a number of these books, prepared under the direction of Western Design, a division of U. S. Industries, Inc. OVERVIEW chose Goren on bridge for its study of the Tutor Text as a fair test of the idea, because it was a subject of some interest and considerable ignorance on the part of the reviewer.

The form of the book is what's evaluated, since one can assume that Mr. Goren is thoroughly qualified as to the content.

Our first reaction is that this is not a book in the usual sense. After forty-plus years of reading things that look just like the Tutor Text, at first appearance, it is hard to adjust to the concept and plan of the book. Even the work-book or laboratory manual is no preparation. To get a full, fair evaluation it seems that we should use several of these to overcome the psychological blocks in the requirement to leaf forward and backward as one progresses through the volume.

When one has become fully reconciled that this is *not* a book in any familiar sense, but a printed and bound "teaching machine," then it can be used and judged wholly by the evidence of original and retained learning that accrues to the student.

Try this or some other of the Tutor Texts on a younger person with less fixed reading habits. It seems a promising way of "learning" certain facts and skills.

(Incidentally our bridge game took no great leap forward in quality—perhaps because our partners were no Gorens!)

MANAGEMENT AND CORPORATIONS 1985

Edited by Melvin Anshen and George Leland Bach. New York: McGraw-Hill Book Company, Inc. 253 pp. $5.50.

It's the *1985* in the title that makes this significant to OVERVIEW's readers. Dean Bach of Carnegie Tech's Graduate School of Business Administration apparently initiated the project on the grounds that today's business school student will be only in his forties even twenty-five years from now—and we should get best guesses on what kind of business world he may expect then!

Perhaps three or four of the titles will suggest its flavor and the interest it may hold. The Corporation: Will It be Managed by Machines? (Her-

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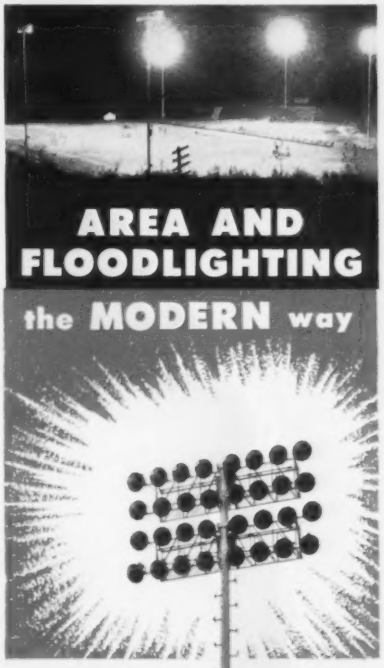

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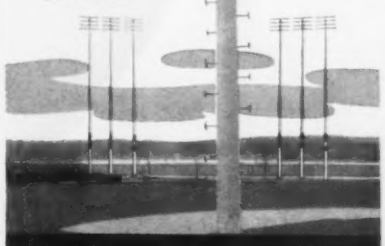

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bert A. Simon). The Corporation in a Democratic Society (A. A. Berle, Jr.). Management of the Multinational Corporation (David Lilienthal). The Corporation and Education, Ethics, and Power (Robert M. Hutchins).

Do you know these people? Or Barbara Ward (for another example)? If so, you'll want to read this engaging look into the future.

DON'T PUSH ME!

Edited by Margaret Rasmussen. Washington, D. C.: Association for Childhood Education International. 40 pp. Paperback, 75¢.

"Children who are developing through school need protection from two extremes: (1) the indifference or ignorance of teaching that permits them to waste away their precious moments, and (2) the excessive pressure of teaching that ignores the incapacity to keep up with the pace that is asked."

These opening words of Supt. Harold Spears (of San Francisco) set the stage for a notable series of discussions of pressures on children. His own introduction is a statement we'd like to publish in full on our editorial page.

Whatever the level of educational institution we head (or even as just plain parents and citizens), this little document will help us recall how far we have come in our understanding of the educational needs of young children. It should strengthen us in our efforts to hold fast to that which is good in our schools.

As a much-needed counter to the pressures to begin earlier, to toughen up, to ignore research—even to come to mass-and-class teaching—this is a refreshing and welcome statement. Its contributors have earned the right to speak out for the child. They are worth reading and heeding.

PROGRAMS FOR THE GIFTED

Edited by Samuel Everett. New York: Harper & Brothers. 299 pp. $5.50.

There's been much writing on this subject—and more talk. The John Dewey Society's cachet on this book is well earned by the writers, and particularly by Mr. Everett who had "over-all responsibility for limitations of design and execution." Some of the material (and all of the fine authors) is familiar to those who have been interested in the field.

The unique contributions are two: —three chapters on Ideas from USSR, the German Gymnasia, and the English Grammar School; and six reports on programs in as many quite different American secondary schools.

Recommended for secondary school principals, superintendents, and those with more than casual interest in the problems and opportunities in giving special attention to the challenging of the "able" student.

TAXES FOR THE SCHOOLS

By Roger A. Freeman. Washington, D. C.: The Institute for Social Science Research. 441 pp. $5.

This book should be reviewed by someone entirely outside the field of public education. But since so many

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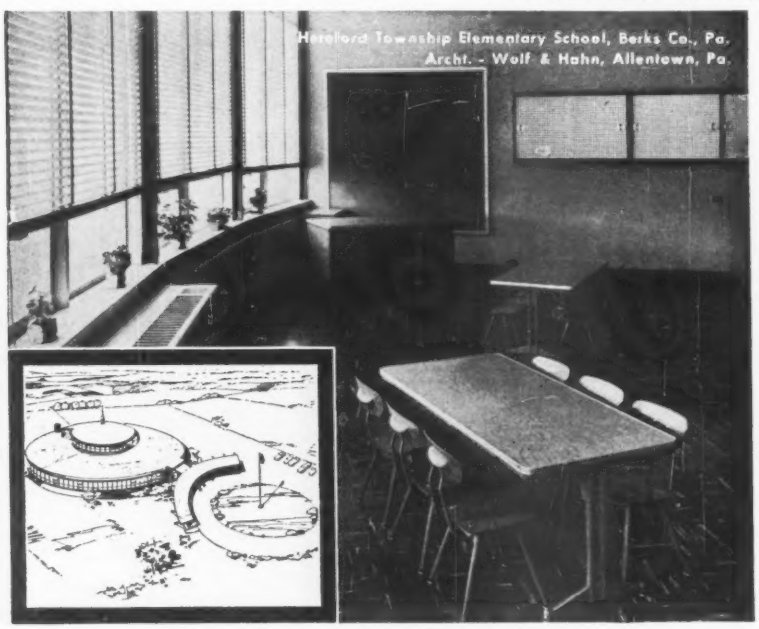

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of our readers are in that field, they may welcome a comment from a colleague.

It is the second and concluding report of a "research" project carried on by Roger A. Freeman for the Institute for Social Science Research. If you believe that the need for increased support for our schools is largely necessary only because "proposals to improve the educational process by more efficient use of the available resources are being obstructed by a well-organized resistance" then you'll enjoy reading this book.

It is certainly colored in language and conclusion by Mr. Freeman's pre-existing attitudes toward taxes, toward federal aid, and toward professional school administrators. We're still naïve enough to be disturbed that such a work should be represented as social science research. It is the aftermath of research and contains some of the research results, but we can't believe that it would be accepted by social scientists—or researchers—as a dispassionate report on research.

The closing sentence of the last chapter (on Federal School Aid) may illustrate:

"But the congressional debates of recent years leave room for doubt whether the extraordinary efforts of the school aid protagonists against no organized resistance have brought massive general federal school aid as close to realization as its supporters believe." *No* organized resistance, Mr. Freeman? No U. S. Chamber, no American Medical Association (to name but two)?

THE FACTS OF AMERICAN LIFE

Edited by M. B. Schnapper. Washington, D. C.: Public Affairs Press. 420 pp. $6.

The purpose of this book as set out in the Foreword is "to present, in question and answer form, authoritative and up-to-date information (about America) of the sort the average person would like to have at his fingertips."

Of course we started with the section on American Education. We found there an impressive array of information, most of which is available elsewhere only after considerable digging. The facts are reasonably accurate—surely accurate enough for all practical purposes. Even more important, they are uniquely available in clear narrative English.

The material ranges from the answer to "How many institutions of higher education are for men only?" to the attempt to compress into four lines the answer to "Which modern writers are covered in world literature courses?"

At any rate, did you know that there are 270,000 Sunday or Sabbath Schools serving 37 million children of various faiths and denominations? (page 403, Miscellaneous).

I'm sending for one for my home library. The review copy is invaluable for our office (and yours)!

THE CRISIS WE FACE

By George Steele and Paul Kircher. New York: McGraw-Hill Book Company, Inc. 220 pp. $4.95.

This is not an "educational" book. It is a fascinating critique of our

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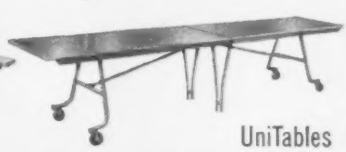

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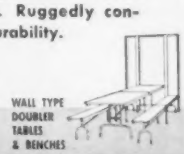

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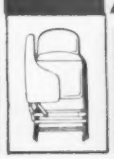

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Philadelphia AASA Show March 25-26-27-28 Booth H9 & 11

Bookshelf (continued)

weapons automation program with an accompanying commentary on the problems and pitfalls of piecemeal automation in the large corporation. Our excuse for reviewing it here is the chapter on Education for Management, Research, Design, and Maintenance of Automation, with its inevitable conclusion that "Americans need a lifelong program of education. Nothing short of this will do."

In its critique of our defense it is frightening but informative. Push-button warfare seems infinitely harder on defense than on offense. On the other hand, it does make clear the important difference between automatic devices and automation—a useful distinction to anyone contemplating a computer (and what large organization isn't?).

Recommended for administrators of technical and scientific education, and for the rest of us who have some curiosity about automation or concern about our weapons system.

Social Status and Leadership—The Case of the School Executive

By Melvin Seeman. Columbus, Ohio: The Ohio State University. 156 pp. Cloth, $4.; Paper, $3.

The Use of Instructional Materials

By Amo de Bernardis. New York: Appleton-Century-Crofts, Inc. 100 pp. Paperbound, $1.10.

Government of Public Education for Adequate Policy Making

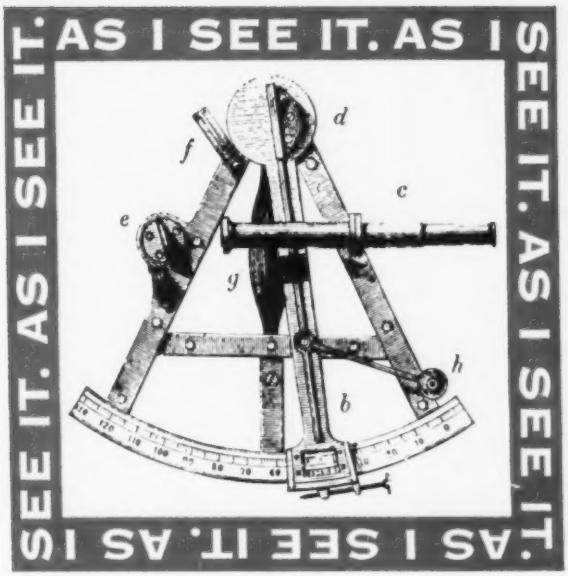
Edited by William P. McLure and Van Miller. Urbana, Illinois: Bureau of Educational Research, College of Education, University of Illinois. 103 pp. Paperbound, $2.

American Association of Colleges for Teacher Education—Thirteenth Yearbook, 1960 Annual Meeting

Published by the AACTE (NEA). For copies write to Edward C. Pomeroy, Executive Secretary, 1201 Sixteenth St., N. W., Washington, D. C. 285 pp. Paperbound, $2.50.

The Campus and the People

By M. M. Chambers. Danville, Ill.: The Interstate Printers and Publishers. 75 pp. Paperbound, $1.80. •



Crisis vs. Planning

Walter D. Cocking comments on the current scene

THE PROBLEMS FACED by education find their setting in the larger problems which face the nation and entire world. Among them: the growth in population; expanding technology; increase in unemployment; momentary slowing of the economy; inadequate tax structure at all levels of government; emergence of new nations and the conflicts among nations for the fulfillment of national aims; the growing insistence in the United States and in all nations for a better education for everyone. These problems and others similar to them provide the frame in which educational issues and problems are cast, and for which solutions must be found.

They make the school administrator's job exceedingly difficult, and will make it more so in the years ahead. There is the increase of school enrollment and the trend for students to persist in schools for longer periods of time. Already faced with an inadequate quantity and quality of teaching personnel, the increased numbers of students will make it more difficult to secure adequate staffs, thus causing a need for more and better plant facilities and the funds to finance them. Central office staffs have to be expanded to meet the greater demands made on the schools. We must review present programs and formulate new programs in light of new conditions. Present organization machinery based upon an agrarian society has to be revised radically. There is too little money available under the conditions imposed by our present tax structure. Only an overhaul of present methods will make it possible to finance the schools in the immediate years ahead. All these problems demand action *now*.

The result is that school administrators are harassed as never before. What to do, which way to turn, are burning questions. And answers to them must be found quickly.

To complicate the issue, the school administrator as well as his big brother, the university administrator, is so busy administering the complicated and intricate machinery of his current operation that he has little, if any, time to plan ahead. The average administrator finds little time to read, and even less time to try to think problems through. Decisions without a weighing of all the facts and implications are dangerous. He knows all this from past experiences when too hasty decisions were made on too scanty information. What then are the alternatives open to him?

One is to continue without much change what is being done now with the hope that somehow the hard decisions will not have to be made. Certainly this is a vain hope but nevertheless somewhat soothing. Again he may abdicate his leadership responsibility, and hope that someone else, his board, a citizens group, the state department of education, or even the state legislature, may come up with a solution and make the decision.

The third possibility and, as I see it, the only tenable one, is to reorganize himself, that is, his time and his actions, so he can plan on the basis of known facts and infinite thought. Then he makes his decision and proposes his recommendations. I am convinced this is the method the administrator in the 60's must use if wise plans are to be made and intelligent decisions produced. Such a procedure puts a heavy load on the administrator, already overloaded. Will he do it? The future of a free society as well as of education is riding on the answer which the school administrator makes. And there is little time left. ●

Student Teachers in Your Classrooms

Is it the public school's job to train student teachers? Some administrators may well argue that they have problems enough without turning their classrooms into practice labs for the teaching majors at state college. Fact is that teacher training *is* one of the administrators' responsibilities. Teacher education is a state function and public schools are, by statute and common law interpretations, state-owned agencies. What is more obvious, then, than to combine the two at the common focal point: the public school classroom? This is more than a logical deduction; it is, or can be, a practical arrangment for both the college and the public school.

The rising number of student teachers (nearing 100,000 this year) has long since overflowed the practice teaching laboratories provided within the colleges themselves. These students have had to move off the campus and into the public school classroom in order to apply theory to a practical teaching situation.

On the receiving end of the arrangement, the public schools benefit because they get an inside lead on teacher recruitment. The administrator can observe practice teachers as prospective candidates before ever obligating himself to a contract. And teachers who are thus recruited already have become oriented to the school district.

Once an equitable arrangement is made between college and school district, the problems narrow down to the student teachers and the regular staff, some of whom must be given the responsibility of supervising their tyro colleagues.

For example, should supervising teachers be given a lighter teaching load? Anyone who has worked with student teachers knows that a good deal of time is needed to work on teaching plans, evaluate progress, analyze problems, and dig out supplementary materials. The student teacher cannot simply be absorbed in the school system without a plan.

How should the work of the supervising teacher be recognized? Is token payment offered by the college the sole compensation, or should the job be given the professional status due it? Is it recognized on the salary schedule? The American Association of Colleges for Teacher Education believes that supervision of student teaching is a professional obligation of teachers and that only professional recognition should be made.

There are questions concerning student teachers themselves. Should

By William Bennie, associate professor of education and director of student teaching at Miami University, Oxford, Ohio.

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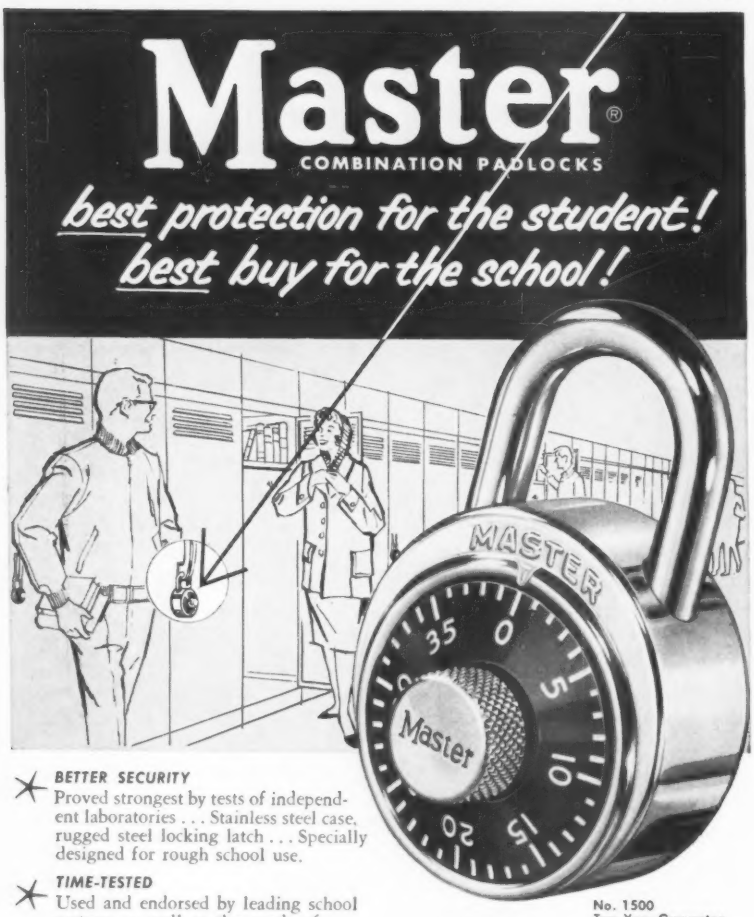

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they be used as substitutes? Should they become involved in extracurricular activities? What about playground responsibilities? Homeroom duties? Study halls? Should they be given a full day's teaching load?

Each school district has to work out these problems for itself, of course. The yearbooks and pamphlets of the Association for Student Teaching are good sources of information, particularly in guiding the supervising teacher. Here are some good general rules of thumb:

1. Student teachers actually increase the work of supervising teachers. They are not intended as cheap labor to lighten the load of the regular staff.

2. There is danger in trying to use student teachers to stimulate or strengthen weak teachers. This may happen, and when it does it's an extra dividend, but don't plan on it. The novice is there to learn, not to inspire.

3. Some teachers will be disinclined toward the idea of working with student teachers. Respect their preference. After all, interest and willingness are necessary for successful student-teacher cooperation.

4. There is danger of maintaining the status quo. Unless student teachers are placed with teachers who have unusual ability there will be little improvement in the next crop of teachers.

5. There is always the chance of bad communication between the school and the teacher-training institution. Each needs to know what the other expects of it. This means that there should be campus supervision of the student teacher's work and close contact between student, supervising teacher, and campus superviser.

It may come as a surprise to some, but classroom experience constitutes close to half of the professional hours of education required of teaching majors. That adds up to a lot of hours our future teachers must spend in school classrooms across the country. But public school administrators can only be glad for this. For by helping in the practical training of teachers, administrators can make their schools "staff-insured." ●

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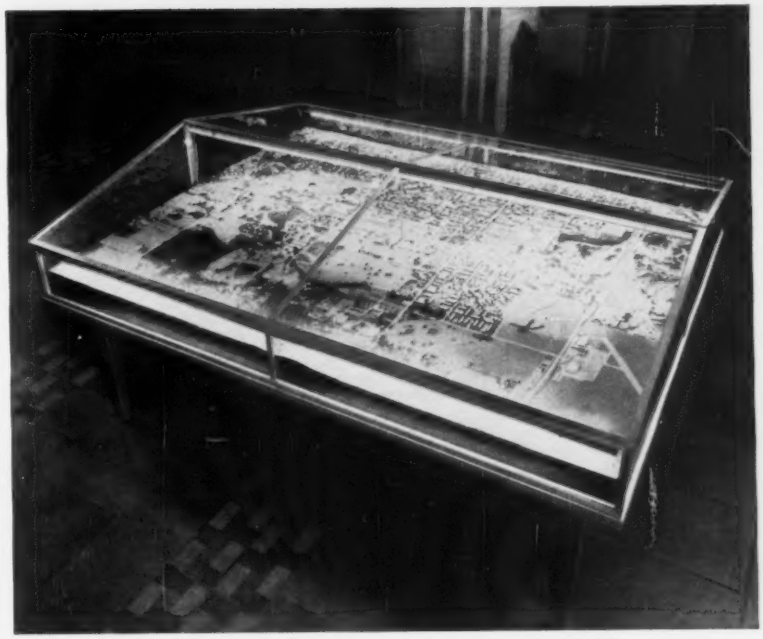

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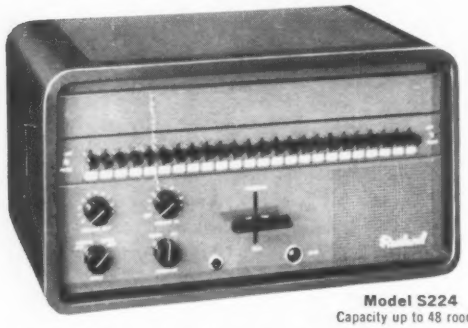

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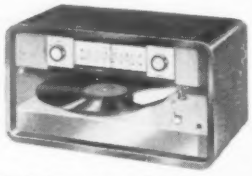

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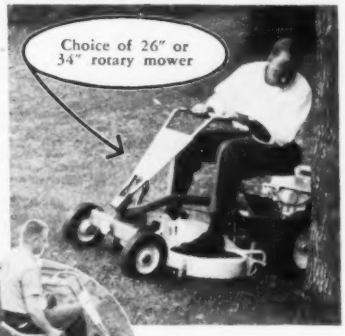

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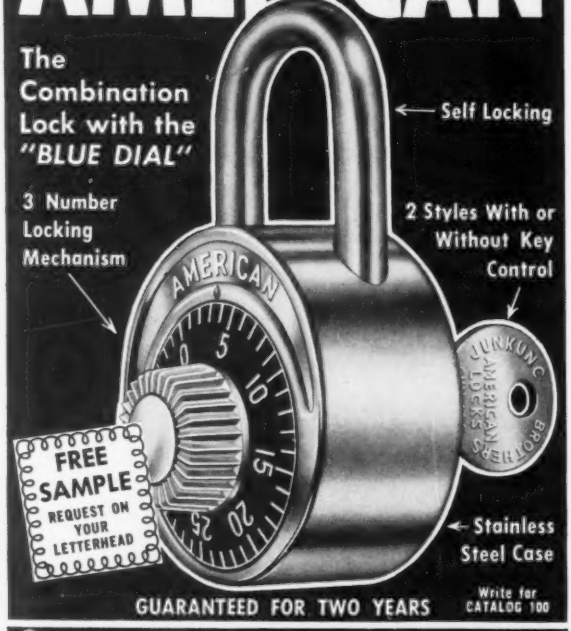

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School-made Films On Commercial TV

EDUCATORS ARE babes in the woods when it comes to working with commercial television. However, this medium is proving to be one of our profession's best public relations tools. It must be approached gingerly, for commercial television people are a unique breed with an overwhelming collection of technical and philosophical "codes of operation." But good planning will net *very* good results, as the Michigan Education Association has happily discovered.

We first asked commercial TV for a share of the public eye back in January, 1959. On our boards were plans for a statewide TV series called *The Constant Challenge,* an objective documentary film report of education's problems and progress in Michigan.

Our first step was to query all sixteen stations to see if they would be interested in our thirteen-week filmed series. A majority replied affirmatively. At that point, MEA's production team and Michigan State University's crew from WMSB-TV went to work on a "pilot film," a sample installment produced as if for actual viewing. While they were at work, I wrote each of the sixteen stations again asking for a convenient appointment with them. Purpose: to let them see our pilot and discuss possible telecasts of the whole series.

The station managers and program directors realized that we hadn't been idly brainstorming; we actually had a product. They invited me to visit them. They saw our pilot, looked over the synopses of the twelve films yet to be produced, and were ready to talk business with us. We were obviously reliable, serious, and adequately financed. And we were proving it in their—not our—terms. Twelve of the sixteen stations agreed to carry our series.

To a great extent we are getting something for nothing. Hence, it is up to us to make the relationship as comfortable as possible for the stations. Much of the comfort, though, is simple courtesy and common sense. For example, with few exceptions, TV stations are hectic, understaffed, and bombarded by requests from public- (and publicity-) spirited organizations. We decided to give them an assist, however, After we received confirmations from the twelve stations, we sent each participating station (1) filmcase mailing cards preaddressed for the next user-station in our informal statewide twelve-station network, (2) a check to cover mailing fees for the thirteen installments, (3) a schedule of the programs in the order to be received, and (4) a list of people (and their phone numbers) to call in the event of an emergency.

Commercial TV stations want good quality public service programs and at least a minimum of cooperation and understanding. Here are some guidelines that any educator—school, college, business or union—might well keep in mind:

1. Get to know personally the management (and the staff if you can) of each station in your area.

2. Serve them throughout the year with news and information even though most of it won't be used. Show your organization to be thoughtful, considerate and RELIABLE.

4. Don't expect them always to pick up the tab on special projects such as American Education Week slides or B-I-E Day spots.

5. Don't hesitate to approach stations with program ideas or an actual film. But spell out your project with facts and figures.

6. Periodically thank a station for its cooperation and interest in education. Create a dignified awards program through which you can publicly and legitimately commend a station for its fine work. (Michigan gives annual "School Bell Awards" for excellence in education reporting; the California Teachers Association gives the John Swett Award.)

7. Take any air time the station offers. It's a favorite trick of some station managers to offer a less desirable time (such as 7:30 AM) to see how serious you are. Take it, do a quality job, develop a good following, and your program will be moved to a better time slot.

8. Even with stations located far away, drop in on them at least twice a year for lunch or just to exchange ideas. The personal approach can't be emphasized enough!

Many educators feel that mass media are always criticizing the schools, but such is not the case. Actually, they're waiting for us to come out of our shells and work with them. That's a fair request for the benefits derived—at least, that's what we of the Michigan Education Association have learned. •

By Jack White, public relations director with the Michigan Education Association, Lansing.

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Teaching via the Scientific Method

Aldous Huxley noted recently that most people function at 15 percent of their mental capacity, that progress would be substantial if this level were raised to 20 percent. Perhaps one reason most of us never plumb our intellectual potential is that so few of us were the "typical student" to whom our classroom instruction was geared.

Why do we hold to single, common approach in teaching our students when research has proved that no two persons are identical in ability, motivation, or experience? It may be easier to administer a common teaching approach, but this is no justification if the method is inadequate. When a class of thirty students is taught by a single approach, it is probable that no more than one (the "typical") will learn the maximum that he is capable of. The education of the rest is comprised to some degree.

There is an approach that will give *every* student the opportunity to advance as far as he is able and as fast as he can. This is the scientific, or problem-solving approach.

Its premise is this: learning is meaningful and therefore retained to the degree that it is self-motivated and therefore assimilated into prior learnings. It assumes that each person works, studies, and gathers information only as fast and as well as his own abilities will let him. It does *not* assume that some single, simple factor like a teacher's explanation will weld isolated elements into a meaningful whole and thereby give all students "equal" instruction.

Using the scientific approach the teacher establishes and defines the area of problem-solution, approaching it in such a way as to make it both interesting and meaningful to the class group. Once he captures their interest he draws the students out in discussion. At the point where understanding and progress become difficult, real study begins.

If a single problem needs solving, the class may need to work as a single unit. This is an excellent method when students have not yet learned how to work alone. If there is more than one problem to solve, the class may divide into groups of four or five students who will investigate different aspects of the problem. When the area of study takes on many problems, each student should elect the one which fits his interests at that time. By sharing their findings,

By Foster Wilkinson, assistant professor at Trinity University, San Antonio, Texas.

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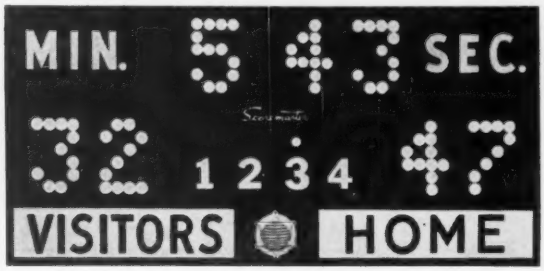

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they will gain much over the single approach of handling the same information on the same pages of the same book at the same time in the same manner.

The scientific method of learning can be employed at every age or grade level. Only the type of problem—rather, the degree of difficulty in its solution—needs to vary according to the development of the student. At whatever stage, the framework of the scientific method is essentially this:

First, a question arises from the initial lesson in an area of study. Instead of answering the question immediately (which answer, research tells us, only a small number of students would remember for long), the teacher challenges the student by encouraging him to find the solution on his own initiative.

Second, the student makes a note, either orally or written, of what he already knows about the problem. It may not necessarily be correct, but it gives him some guide and point of interest as he progresses with his independent study and research.

Third, he gathers the information from every source possible—oral, written, and first-hand, and by means of interviews, excursions, experiments, specimens, and literature.

Fourth, the findings must be logically organized, either in sequence, chronologically, or by topic, so that they may be analyzed. Information that does not pertain directly to the problem under analysis should be filed for future reference.

Fifth, check the hypotheses or theories held at the beginning of the study and make such changes as appear logical as new and pertinent information comes to light.

Sixth, draw a conclusion based only on what is found to be pertinent. This conclusion is always subject to revision and change when new evidence is found.

Seventh, some use should be made of the conclusions or findings. Students may wish to study further into problems that have come out during their search for information, or they may wish to make some practical use of the findings by writing a report for the school paper. Each problem that is studied must be reported to the class in some form for benefit of the other students.

Naturally the scientific approach requires more of the teacher. He must make the overview or motivating lessons powerful enough to challenge and interest each student into accepting a worthwhile problem to solve. And then he must direct, supervise, and guide until the conclusion has been reached and applied. Just as naturally, much more will be learned than that which pertains strictly to the problem under solution; this is where the student gets his liberal education. Allowing for as much as 70 percent duplication of information in this approach, a class of thirty students should learn from eight to ten times the amount that they presently have an opportunity even to handle.

With the scientific approach to learning, student accomplishment can be easily measured and evaluated. We can never measure every-

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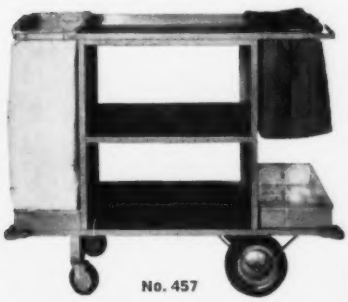

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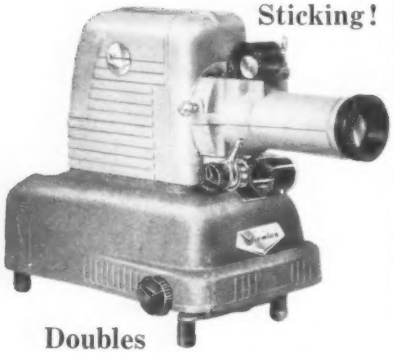

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Scientific Method (continued)

thing an individual has learned, but we can determine whether specific areas of knowledge (skill or subjective) have been developed. This is very logical when considered in terms of performance, application, and retention.

Take, for example, the simple problem of adding two and two. A child can easily learn that two and two are four by repeating it several times to himself and would earn a top grade by answering the question correctly. The real test, however, rests in his ability to distribute four objects into two groups or to count in two's until he has reached four and, finally, in what he does with the four objects when confronted with a real problem.

While the scientific approach is intended to open multiple avenues of learning activities that will eventually fully educate the individual, each study problem may be limited as needed for the sake of evaluation. Final evaluation might vary from "successfully completed" to a percentage score, letter grade, work permit, or a professional license.

The best type of measuring device is not one that tests the amount of recall alone, particularly when much of the material may not be important enough to recall. Real measurement must test the ability to handle information. The ultimate test of ability to perform is in the performance itself.

The scientific method of instruction will not be easy to put into effect. Teachers would need to be retrained, or at least re-oriented, and more study materials would have to be made available to students (particularly community resources). The biggest problem, however, will be for the administrators to convince themselves of the value of this method and to qualify themselves to supervise it.

The prospects of teaching and learning made so tremendously much more effective via this method is tantalizing to imagine. Think of the potential of this country if all its citizens were functioning at, say, 75 percent of theirs. •

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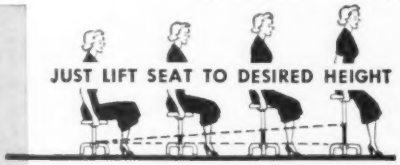

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Off The Ground

More than a half million pupils in six midwestern states are tuning into the first lessons ever telecast from an airplane. They're taking part in the current demonstration and testing phases of the Midwest Program on Airborne Television Instruction.

Based at Purdue University, (Lafayette, Ind.), the experimental project beams videotaped courses from a circling DC-6 to schools in Indiana, Illinois, Kentucky, Michigan, Ohio, and Wisconsin. Fourteen series of telecasts—eight at elementary, four at secondary, and two at junior college levels—are being transmitted on a regular weekly schedule.

Dr. John E. Ivey, Jr., MPATI director, explains that the students in on the preview "represent more than 10 percent of the five million students we estimate are within range of the airplane's signals." Almost 17,000 classrooms in the six-state area have been equipped to participate.

Ivey feels it's more important to do a good job of signal testing, allowing time to work the bugs out of both the transmitting station and the classroom receivers, than to start transmitting a full curriculum immediately. MPATI's first full academic year starts in September.

Under grants totaling nearly $8 million from foundations and equipment manufacturers, the project has:

- Recruited "the nation's best teachers" to record their courses on videotape for transmission from the planes.
- Designated twenty demonstration schools where educators may become acquainted with the project.
- Established a "quality control unit" at Purdue to review tapes and revise when necessary.
- Built runways and hangers at Purdue to accommodate two specially equipped DC-6 "flying classrooms."

Chalk These Up

Two junior college "firsts" have just been recorded: Pensacola (Fla.) Junior College is the first in the nation to install a nuclear reactor and Everett (Wash.) Junior College is first to offer a course in Swahili.

Colleges Battling Shortage of Trained Doctors

The nation has a critical shortage of doctors and other trained medical personnel. And our universities had better do something about it now.

"We need more doctors," says a Johns Hopkins University report. "To train them we need more medical schools. But we don't have qualified teachers to staff new medical schools, and the quantity and quality of medical school applicants is declining."

To keep up with population growth, American medical schools will have to increase their output of physicians from the present annual rate of 7,400 to 11,000 by 1975, says Johns Hopkins. At present rates, however, medical schools would graduate only 9,000 physicians a year by 1975. The only solution is "to expand existing medical school facilities and build twenty to twenty-five new medical schools," the university states.

In its annual report on medical education, the American Medical Association concurred with the Johns Hopkins view. The AMA called for expansion of medical school facilities and the building of several new schools during the next decade. Major changes in medical school financing, as well as "extensive and expensive" new physical facilities, will also be required, the association said.

Voicing more optimism than others, the AMA pointed out that forty-two medical schools will spend $126.7 million in 1960 and 1961 on new facilities, bringing total construction (planned or already begun) to just over $200 million. Construction completed by medical schools in 1959 and 1960 totalled $94.7 million, the AMA said.

In 1960, two new four-year medical schools graduated their first classes: the University of Florida College of Medicine and Seton Hall (N. J.) College of Dentistry and Medicine. In addition, the West Virginia University School of Medicine is expanding to a four-year program and the University of Kentucky College of Medicine registered its first class this year.

Michigan State University is considering a new two-year Institute of Biology and Medicine, from which students could either enter a medical school at the third-year level or obtain an advanced degree in biological science.

Boston University will initiate next fall a six-year program of combined liberal arts and medical study for "exceptionally gifted" students to replace the traditional eight-year sequence. After two years of arts and sciences, the qualified student will continue in the university's medical school for four eleven-month school years. (Two years ago, Johns Hopkins inaugurated a program by which

Another Close One

An Arkansas law requiring teachers to file a list of all organizations they have belonged to during the past five years has been struck down by the U. S. Supreme Court. Five justices ruled that it was so broad as to invade the teachers' right of free association. The four-man minority held that the law was a constitutional and reasonable way of screening teachers for fitness.

The majority agreed that the state may investigate the fitness of teachers, but they objected to the "unlimited and indiscriminate sweep" of the statute.

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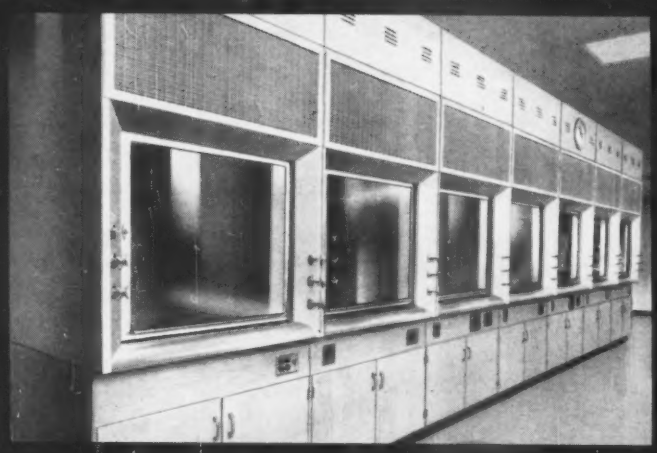

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students could earn an M.D. in five years.)

Harvard's current $58 million program is aimed at enlarging and strengthening its faculty of medicine. President Nathan M. Pusey says that "doctors and medical scientists cannot suddenly be mass-produced. . . . Today the bottleneck is a critical shortage of teachers of medicine." He noted that there are over 600 vacancies on the faculties of the country's eighty-five medical schools.

Hardy Perennials

Twenty thousand high school and college teachers of science, mathematics, and engineering will go back to school this summer. They will participate in programs supported by the National Science Foundation on 260 college campuses. NSF has made $22.7 million available in grants for 1961 to increase classroom effectiveness of teachers.

Tuition and fees are paid. In addition all teachers receive stipends of not more than $75 a week and allowances for travel and dependents. Institutes last either six or eight weeks.

Meanwhile, graduate level summer fellowships for 200 public, private, and parochial secondary school teachers and guidance counselors will be provided by the General Electric Foundation. Grants to four schools (Rensselaer Polytechnic Institute, Purdue and Syracuse Universities, and Claremont College) will cover all expenses during a six-week course of study. The program at Syracuse is for guidance counselors; the other three are economics for social studies teachers.

Lights On

Lights burned in thousands of Oregon classrooms the night of January 5 in a concerted campaign to acquaint citizens with the state's education problems. In a joint approach sponsored by the Oregon School Boards Association, the Oregon Education Association, and the state PTA, citizens and schoolmen turned out

for an evening indoctrination about school proposals which will come up in the current session of the state legislature.

A major problem is not only to arouse broad local interest in education legislation, but to maintain it throughout the legislative session, the Oregonians admitted.

Untapped Source

Enough new teachers aren't coming out of college to solve the teacher shortage in many school systems. Recognizing this, an Akron, Ohio, citizens advisory committee took an aggressive step which promises to alleviate their city's shortage.

The committee combed the community, contacting ex-teachers who might consider returning to teaching, college graduates wishing to train for teaching, and friends or relatives of Akron residents who were teaching in other cities and who might be interested in Akron positions.

A questionnaire sent to 49,000 homes produced 949 names of prospective teachers. More than 200 of these expressed a distinct interest in teaching—seventy of them were former teachers holding college degrees who wanted to return to the classroom.

A Fellow's Taxes

The Internal Revenue Service has ruled that "the terms 'fellowship grant' and 'trade or business' are inconsistent and mutually exclusive," all of which adds up to a better tax break for scholars this year.

Until now, an individual on a non-degree grant had to declare all fellowship income in excess of $300 per month as if it might be considered taxable trade or business income or wages. However, the IRS has further refined the interpretations of Section 117 ("Scholarships and Fellowship Grants") and Section 61 ("Gross Income Defined"). "Although amounts in excess of $300 per month received under a fellowship grant by a person not a candidate [for a degree] constitute gross income," says IRS Bulletin No. 1960-51, "they are neither wages

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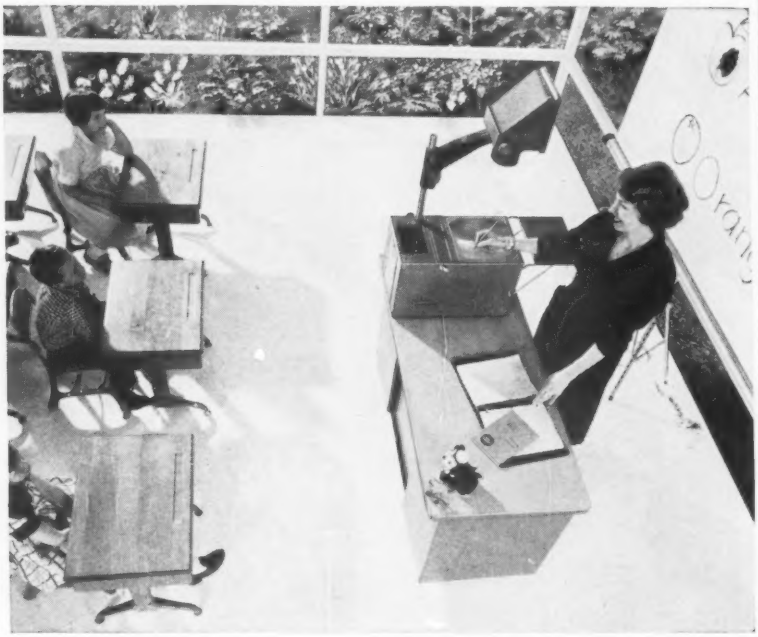

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In another favorable ruling for scholars, the IRS decided that the value of meals and lodgings furnished to instructors and their families is non-taxable. This had been the policy for many years, but last year the IRS reversed itself. In a second reversal this year, the IRS has gone back to its previous policy.

Language Institutes

Nearly 3,200 elementary and secondary school language teachers will attend sixty National Defense Language Institutes this summer and during the 1961–62 school year. In its third year of operation, the program is designed to improve the teachers' ability to speak and understand their languages and to introduce them to new methods of instruction.

Most of the earmarked $6 million will go to fifty-five summer institutes. Public school teachers receive stipends of $75 a week (plus $15 per dependent). Private school teachers receive no stipends, but they aren't charged either.

An additional 2,250 secondary school personnel will attend National Defense Counseling and Guidance Institutes. Seventy-seven colleges will conduct short-term Institutes this summer; seventeen schools will have sessions during the regular term.

The Food Scene

Milk and dairy products will be more plentiful in 1961 than they were in 1960 or in 1959, continuing an upward trend. The same is true for beef and veal.

The U. S. Department of Agriculture, in its annual prognostication, sees more poultry coming to market, with egg production falling off during the first half of 1961. Potatoes will be more plentiful, but sweet potatoes and dry field peas are in short supply.

Food purchasers and food service managers, concerned with fresh fruits and vegetables, will find apples and

pears coming in slowly and expensively until late spring; fresh cabbage, cauliflower, and broccoli available in greater quantities than ever; but tomatoes, sweet corn, eggplant, and green peppers are short. Less canned and more frozen vegetables are also on the horizon for the institutional food buyer.

With just a few weak spots 1961 is shaping up to be a plentiful year for the American dining room.

Whoze to Blaim?

Poor English teaching in the high school was blamed on Big Brother—the college and university—by a college professor.

Harvard's Dr. Harold Martin, who heads the College Entrance Examination Board's Commission on English, reported that only half the high school English teachers had majored in that subject in college. Nearly 30,000 secondary English teachers (about one-third) do not meet the minimum qualifications, he added.

"If there is to be any hope of lasting improvement in the secondary schools, there must be radical correction of collegiate and graduate programs in English," Martin told the Philadelphia convention of the Modern Language Association.

Working conditions for English teachers are "unbelievably bad," Martin said. Most teach five classes a day, and many six, while some have up to 200 pupils of different intelligence and reading ability.

The CEEB commission has recommended lighter work loads for teachers, more theme writing, more grammar, and less use of abridged classics.

Martin said colleges must share the blame for the ignorant and untrained teacher, because "the school teachers were, a few short years ago, our students, and if they do badly the fault is at least partly ours."

Is Artesia Well?

Educators, debating the windowless school, are now confronted by an underground school.

The Artesia, New Mexico, board of education has approved plans for an elementary school to be built entirely underground. It would hold the town's elementary school population (2,343) for two weeks in the event of a nuclear attack. (Active life of Strontium 90: about 28 years.) The school will have eighteen classrooms, a multiuse room, food serving area, mechanical equipment room, administrative offices, toilet facilities, a well, and an emergency power plant.

Specifications have been submitted to the Office of Civil and Defense Mobilization. OCDM will pay the additional costs of underground construction, estimated at $75,000. Total cost of the school will exceed $425,000.

A second Artesia school—a windowless building—above ground—will get an underground addition comprised of five classrooms, a multiuse room, and a food serving area.

A proposal made at the 1960 meeting of the Building Research Institute called for underground schools for fallout protection. BRI suggested that such schools could be "functional and pleasant" and "above all, economical." Providing, of course, that we are bombed during school hours. •

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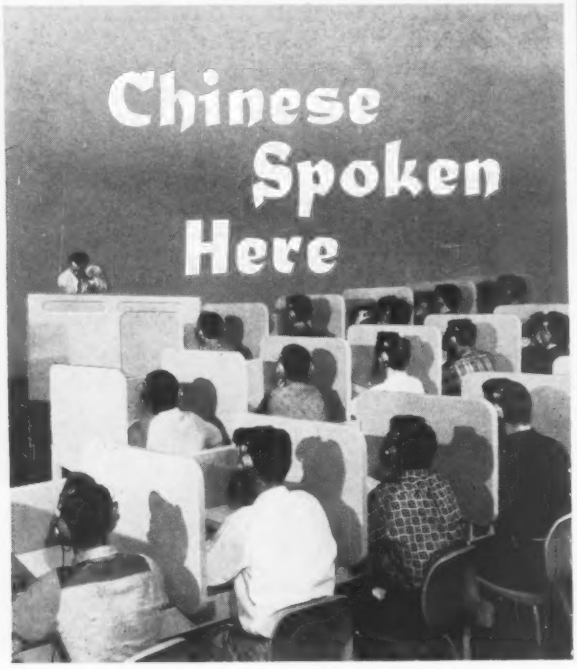

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3 THREE FRAME CROSS-BRACES — two on rear legs and one on front legs insure superior frame stability and rigidity for longer chair life.

4 SEAT FOLDS WITHIN FRAME to double frame thickness for flat stacking—more chairs to storage area.

5 SEAT BRIDGE AND FULLY CURLED EDGE on apron of seat add over-all seat strength and safety—No sharp edges to tear clothing.

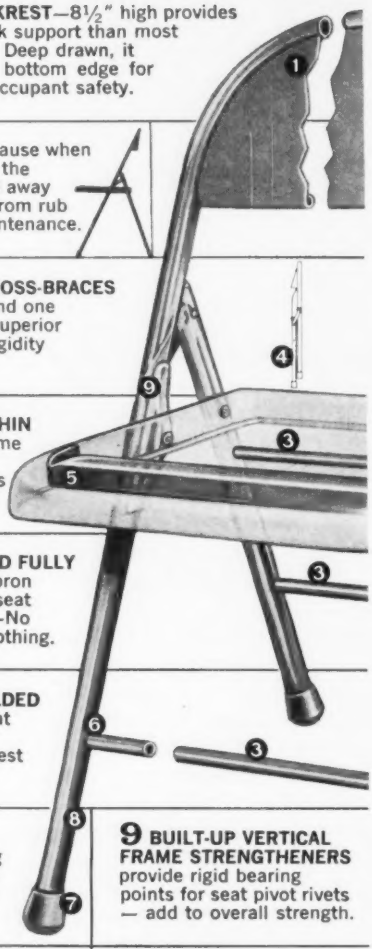
6 RESISTANCE WELDED FRAME similar to that used on automobile frames insures greatest strength and rigidity.

7 SUPER DYLAN FEET — long wearing molded feet are non-marring and provide firm floor contact.

8 ELECTROSTATICALLY APPLIED FINISHES in Standard enamel or Metallic colors . . . free from runs and soft spots.

9 BUILT-UP VERTICAL FRAME STRENGTHENERS provide rigid bearing points for seat pivot rivets — add to overall strength.

10 TEN YEAR GUARANTEE against structural failures is your assurance of the best investment in folding seating, by far!



BE SURE you get what you think you're getting!

To the casual observer, most folding chairs look alike. But what a difference there is upon closer examination! Study the Krueger 901-E features above and you will readily see why they last longer under hardest usage.

These Important KRUEGER Features Cost No More than Competitively Priced Chairs of Inferior Quality.

WRITE for complete line catalog.

KRUEGER
METAL PRODUCTS • GREEN BAY • WISCONSIN

PRODUCT PREVIEW

Stow or Store:
these are for orderly storage

HOME ECONOMICS STORAGE

An example of St. Charles custom designed and manufactured school storage equipment is shown in this high school Clothing Laboratory.

The sewing machines are housed in heavy duty shelves which glide out and lock at the adjoining counter levels when in use. Steel core table tops have Formica surfacing and stainless steel edge banding.

Individual polystyrene tote trays are housed in the back storage wall. Clothing, ironing and utility storage near the grooming center were all custom designed for specialized teaching aids. Distinctive color schemes are possible. St. Charles Mfg. Co., St. Charles, Ill.

Circle **OV-201** on reply card, last page

VISIBLE INDEX UNIT

The Select-A-Matic Visible Index unit recently introduced by Remington Rand offers record protection in fields where heavy reference traffic would normally damage vital papers and the usual record-keeping ledgers and files. With this unit, thousands of references are available in a single tamper- and dust-proof housing. In addition, all necessary information can be transcribed directly on the reference cards to further preclude the need for anyone to handle original documents or ledgers. With the convenient selector arm, a user can find any one of thousands of references in seconds, without the necessity of fingering the record itself or even the reference card.

A picture window displays the tabbed frames for quick and easy reference. A work shelf fronts the unit with a roomy storage cabinet forming the base. Remington Rand, 122 E. 42 St., New York 17, N. Y.

Circle **OV-202** on reply card, last page

OPEN SHELF FILING

The filing capacity of an active file room can be increased by as much as 75 per cent with open filing. The units are offered in two types: letter

and legal size. The letter type has a 12″ base with 9″ deep shelves adjustable on 1″ centers. Shelves are slotted on 1″ centers for use with adjustable dividers. The letter size unit is 36″ wide and 90″ high. The legal unit has a 15″ base with a 12″ deep shelf adjustable on 1″ centers. Shelves hook into end posts and can be removed easily without tools.

Both open shelf filing units have seven adjustable shelves as standard, plus a base shelf. Additional shelves may be added at will. Republic Steel Corp., Berger Div., Canton, Ohio.

Circle **OV-203** on reply card, last page

COUNTER STORAGE UNITS

Grade-Aid's 3000 Series of Counter Height Storage units includes shelf storage, book storage, cubicle storage, tote tray storage, drawer storage and paper storage units. Standard features include melamine plastic tops and rubber-cushioned glides. Optional equipment includes sliding doors in a variety of materials and colors, backsplashes and endsplashes. Grade-Aid Corp., Nashua, New Hampshire.

Circle **OV-204** on reply card, last page

ICE STORAGE BINS

Newest item in the Seco Co.'s line of portable equipment is the completely insulated ice bins for storage and transportation of ice cubes and crushed ice. Available in two sizes: 140 lb. and 200 lb. capacities, the bins are made of heavy gauge stainless steel inside and out with a removable stainless steel cover. There is an easily accessible water drain in the bottom of each bin. Seco Co., Inc., 4560 Gustine Ave., St. Louis 16, Mo.

Circle **OV-205** on reply card, last page

LOCKER LINE

Two new athletic lockers have been added to the All American Locker Line made by DeBourgh Mfg. Co. One model, the Sophomore Double Tier, has ten openings; each opening 12″ wide × 16″ deep × 36″ high with an overall width of 60″. Each opening is complete with garment hooks. The other model is a

30 opening Sophomore Gym Locker. Each opening is 12″ wide × 16″ deep × 12″ high and the overall width 60″. These units have adequate storage and hanging space for average equipment and are particularly suitable where locker room space is at a minimum yet a maximum number of locker openings is required. DeBourgh Mfg. Co., 2924 27 Ave. S., Minneapolis, Minn.

Circle **OV-206** on reply card, last page

SLIDING DOOR CABINETS

The 1961 line of sliding door cabinets by Borroughs come in heights of 29″, 42″, and 78″ and depths of 12″ and 18″. They are equipped with easy-gliding, perfect-fitting doors that slide silently, smoothly and easily, without any wobble or vibration on quiet, low-friction nylon rollers which roll on dust-free elevated tracks. The Borroughs Mfg. Co., Sub. American Metal Products Co. of Detroit, 3002 N. Burdick, Kalamazoo, Mich.

Circle **OV-207** on reply card, last page

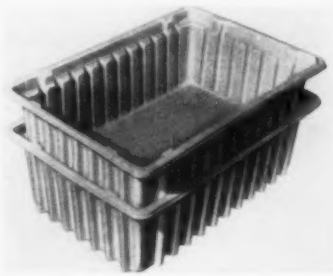
PHOTO SLIDE FILING SYSTEM

A special cabinet designed by Multiplex Display Fixture Co. provides alphabetical and numerical cross index filing for 2340 slides (2″ × 2″) or 780 slides (4″ × 3¼″) or some of each. The unit can be placed on desk or table, or ordered with roller-mounted base, with or without storage compartment. The door opens to serve as a viewing and working shelf. The slides are easily inserted or removed and can be viewed in place against light-diffusing frame. Multiplex Display Fixture Co., 910 N. 10 St., St. Louis 1, Mo.

Circle **OV-208** on reply card, last page

TOTE BOXES

Standard and compartmentalized plastic tote boxes and containers that will stack and/or nest are being made



by Stauffer Laboratories. All sizes and shapes are available with standard sizes in stock and special forms available for special purposes. Made of a new high-density linear polyethylene which is completely unaffected by any known solvent, solution or chemicals at normal room temperatures. Stauffer Laboratories, Inc., Plastics Div., 1919 Vineburn Ave., Los Angeles 32, Calif.

Circle **OV-209** on reply card, last page

LEDGE-TYPE SHELVING

New closed ledge-type steel shelving with lockable doors is announced by Penco Div. These 7-T Series units are ideal for safe storage of tools, parts, costly materials. A waist-high ledge provides a handy working area.

Units are 36″ wide, 89″ high, with a ledge depth of 12″. Ledge and shelf depths available are 24 and 12″, 30 and 18″, and 36 and 24″. Standard starting sections include 7 shelves. Doors are made of heavy gauge steel. Built-in key lock in chrome plated door handle. Penco Div., Alan Wood Steel Co., 200 Brower Ave., Oaks, Pa.

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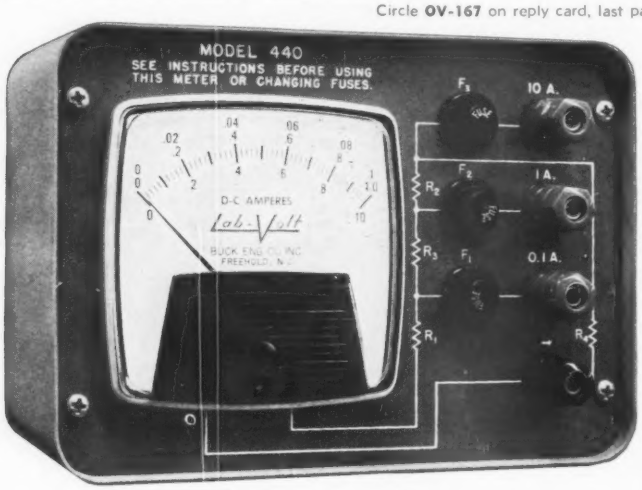
Circle **OV-167** on reply card, last page



NOW *Lab-Volt* BRINGS YOU . . .

FUSED METERS SAFE FOR STUDENT USE!

Here's a Buck Engineering break-through that will end continuous drain on your science funds for repair or replacement of burned out electrical meters.

This revolutionary feature incorporated in a brand new line of meters (designed expressly for educational work) makes the Lab-Volt Companion Line a must for every science program.

COMPLETE PROTECTION from electrical damage by replaceable fuses. Students may use these units without supervision, as they can't be burned out, even when misused.

FUNCTIONAL Selection of ranges insures easy reading of all values throughout the entire range of every meter. Border-to-border scales are up to 28% larger than older models and are not obscured by pointer or shadows. Units may be used horizontally or vertically and stack compactly for storage. All connections are made through five-way binding posts. A schematic diagram on front panel adds educational value.

DURABLE Sealed mechanisms provide complete protection against moisture and dirt, insuring continuous accuracy of ±2%.

Jeweled moving parts insure long life with free movement. Construction is of heavy gage, cold rolled steel, finished in scuff-proof vinyl.

ECONOMICAL Complete metering service is provided by only five competitively priced, multi-range models (A.C. and D.C. voltmeters and ammeters, and D.C. galvanometer).

SEND OR PHONE TODAY FOR COMPLETE INFORMATION

BUCK ENGINEERING COMPANY, INC.

37 MARCY STREET, FREEHOLD, NEW JERSEY • HOPKINS 2-1111

BUCK ENGINEERING CO. INC. FREEHOLD, N.J.

OF GENERAL INTEREST

OVERHEAD PROJECTOR TABLE

Teachers may now use the overhead projector from a normal seated teaching position at their desks, due to a new portable projector table es-

pecially designed by H. Wilson Co. The new table rolls easily up to the side of the teacher's desk and brings the writing table of the projector exactly to desk-top height, giving the teacher easy access to notes and teaching materials which he normally keeps on his desk.

The table is sturdily built, of all-steel welded construction. Only 16" in height, with a shelf size of 18" × 24". Four-inch ball-bearing casters assure easy rolling and positive brakes lock the table into position where desired. H. Wilson Co., 106 Wilson St., Park Forest, Ill.

Circle **OV-211** on reply card, last page

AIR FRESHENER

Airkem Gold is a new product that kills difficult odors. It is available in either solid or liquid form, does not perfume the air, desensitize the sense of smell, or leave an objectionable end odor. Airkem, Inc., 241 E. 44 St., New York 17, N.Y.

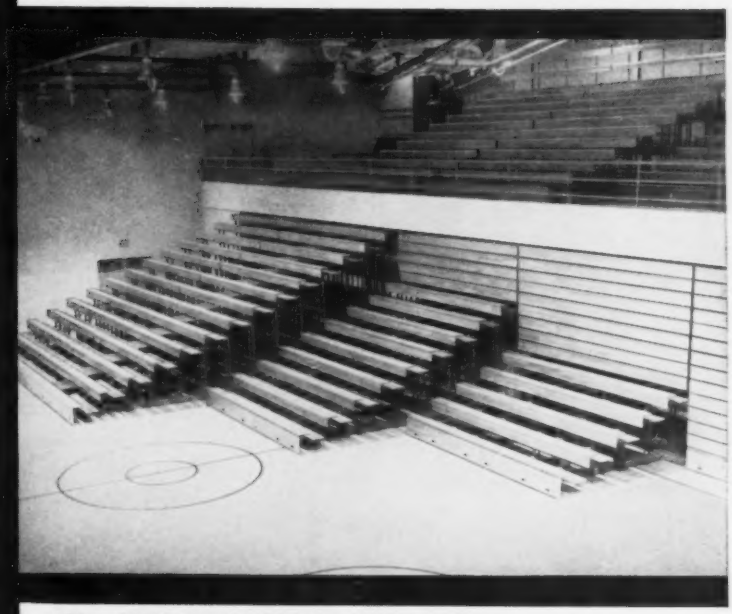
Circle **OV-212** on reply card, last page

FLOOR MACHINE

The Super Service Portable 13SP is a compact floor machine designed especially for small area duty. It combines a very low price with some innovations in floor machine design. It

Circle **OV-168** on reply card, last page

get versatile gymnasium seating for your new or present school building



SAFWAY

TELESCOPING GYM SEATS

permit quick, easy set-up changes for every gymnasium event

YOU CAN assure profitable *full-time use* of your school gymnasium —planned or existing—with this modern equipment, available in recessed, wall-attached, movable and reverse-fold types. Seating set-up changes are made quickly to fit every event. Any number of rows can be locked open (*see photo*). Safway telescoping gym seats give you these practical advantages:

SPECTATOR COMFORT—Good sight lines from every seat. Ample foot and knee room; comfortable inclined seats.

COMPLETE SAFETY—Full protection for spectators, gym users and maintenance personnel.

FLOOR PROTECTION—Non-marking wheels roll in separate tracks to prevent grooving.

EASY OPERATION—Straight-line tracking with extra-large wheels and nylon glides. Motorized operation available (*not needed under 14 rows*).

GOOD LOOKS—Seats nest back into a handsome vertical cabinet. Safway's rich, warm Golden Oak finish will be in harmony with any interior.

SAFWAY

See our catalog in Sweet's or write for copy

STEEL SCAFFOLD INDUSTRY DEDICATED BY SAFWAY TO 25

SAFWAY STEEL PRODUCTS, INC.
6228 W. State Street
MILWAUKEE 13, WISCONSIN

WRITE
FOR FREE BULLETIN
162W

Circle **OV-169** on reply card, last page

Midwest

PRODUCTS
DESIGNED FOR
SCHOOLS
WITH
MULTI-PURPOSE
ROOMS!

DU-HONEY 312
TABLE-BENCH COMBINATION

Easy to store! Easy to fold and unfold! Easy to clean! Built for years of rugged service. Seats 16 comfortably.

DU-HONEY 112
PORTABLE-FOLDING
TABLE-UNIT

Has the Exclusive "Piggy Back" Storage Feature. A Table that can change your multi-purpose room into a cafeteria, classroom or lecture hall in seconds. With the "Piggy-Back", your 12 standard folding chairs store right with the table.

DU-HONEY 512
FOLD-AWAY
ROLL-AWAY
TENNIS TABLE

Features the "Hide-Away" Net. A quality champion built for championship play. Store it in a closet! Glide it into place! Open with "feather touch" . . . and you're ready to play. Regulation net stores inside table in tucked position and extends to official width when opened.

PEDESTAL LEG
FOLDING
TABLE

Plenty of leg room with the "Off-Center" leg principle, which adds seating to ends. Lightweight, sturdy, folds compactly for easy stacking.

CADDIES
FOR CHAIRS-TABLES

The fast, easy, safe way to handle folding chairs and tables. Durable construction engineered for years of efficient service.

FOLDING
CHORAL RISERS

Easy folding! Compact storage! Designed for beauty and strength!

PORTABLE
PLATFORMS & BANDSTANDS

Sturdy, durable! Compact folding! Ideal for music and band rooms.

WRITE FOR
FREE CATALOG

Midwest FOLDING PRODUCTS Sales Corp.
LA-9-2741
ROSELLE, ILL.

is equipped with a solution tank for scrubbing and shampooing carpeted areas and rugs. A cast aluminum brush skirt and standard aluminum drive plate for the standard 13" brush equipment have also been added. National Super Service Co., Toledo, Ohio.

Circle **OV-213** on reply card, last page

PAPER SHREDDER

Positive destruction of obsolete but confidential records is assured with the Auto-Shred. With a 10" feed

throat it will accept practically all office forms. The machine has an automatic feed shredder, housed in a fiberglass case, which is mounted on a matching metal base. The base contains a lightweight aluminum collection bin to assure neat, clean operation. The bin will hold up to 7 normal sized waste baskets of paper and need be emptied only when convenient. Equipped with casters for easy rolling. Industrial Shredder and Cutter Co., Salem, Ohio.

Circle **OV-214** on reply card, last page

EXTERIOR PAINT

Pittsburgh Plate Glass Co. has added five new colors to their Sun-Proof line of exterior house paint, as the result of a survey which showed an increasing interest in greens, browns, and reds. Colors newly available are: Rural Red, Evening Sky, Desert Beige, Redwood, and Jade. Pittsburgh Plate Glass Co., 632 Ft. Duquesne Blvd., Pittsburgh 22, Pa.

Circle **OV-215** on reply card, last page

Circle **OV-170** on reply card, last page

Pella®
WOOD FOLDING
DOORS

oak • birch • ash
pine • walnut •
Philippine mahogany

WRITE FOR FREE LITERATURE
ROLSCREEN COMPANY
Dept. MI-3, Pella, Iowa
MANUFACTURERS OF PELLA WOOD WINDOWS, WOOD FOLDING PARTITIONS AND ROLSCREENS

Circle **OV-171** on reply card, last page

USED AND APPROVED BY LEADING UNIVERSITIES!

Model RV-6
6-INCH DYNASCOPE
Reflecting Telescope

includes these features:
- **Electric Drive**
- **Rotating Tube**
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Completely Portable! Entire telescope dismantles in minutes for easy carrying.

Easy Terms Available!

Finest American-made 6-inch reflector in its price range! Save $100 or more, yet get all these fine features. f/8 6-inch mirror accurate to ⅛ wave • 3 matched eyepieces (75X, 150X, 343X) • 6x30 Achromatic finderscope • Heavy-duty mount with setting circles • Rack & Pinion eyepiece holder • Sturdy lightweight tripod.

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PRODUCT LITERATURE

Drapery Handbook

"The Complete Handbook of Window Decorating." Contains suggestions for drapery treatments for a variety of window styles and window groups. Included is a list of fabric facts, a how-to section on measuring for custom and ready-made curtains and draperies, and illustrations of the types of drapery hardware available. For teachers and home economics groups. Pittsburgh Plate Glass Co., 632 Ft. Duquesne Blvd., Pittsburgh 22, Pa.

Circle **OV-301** on reply card, last page

Environmental Control Cabinet

"Sheldon Climatarium." The T-3152 Climatarium described in this leaflet makes possible the full control of light, heat and air circulation for experiments in photopriodism, phototropism, and photosynthesis among others. The assembly consists of three components: the Climatarium, the Lightproof Cover, and the Light Assembly with a built-in Service Control Panel. Full instructions for studying plants and animals included. E. H. Sheldon Co., Muskegon, Mich.

Circle **OV-302** on reply card, last page

Maintenance Products

Zep Mfg. Corp. has just issued a comprehensive catalog on a wide variety of floor cleaners, waxes, housekeeping aids, disinfectants, dishwashing compounds, insecticides, germicides. Floor machines, mops, receptacles, sprayers also described. Zep Mfg. Corp., 1103 Slocum St., Dallas 2, Tex.

Circle **OV-303** on reply card, last page

Swimming Pool Equipment

"Swimquip." Everything for the swimming pool from deck to underwater and filter equipment is amply described and illustrated in this well-organized catalog. Engineering data included. Swimquip, Inc., 3301 Gilman Rd., El Monte, Calif.

Circle **OV-304** on reply card, last page

Tote Trays

"Better Use of Storage with Washington High-Impact Polystyrene Tote Trays." Compact, scuff-resistant trays to store school supplies, laboratory equipment, gym shoes, etc. in a limited area. Complete details in this flyer. Washington Steel Products, Inc., 1940 E. 11 St., Tacoma 2, Wash.

Circle **OV-305** on reply card, last page

Plastic Lab Ware

"Catalog J1060." Twenty-four pages of data on the complete line of unbreakable, corrosion-resistant plastic laboratory ware made by The Nalge Co., Inc., Rochester 2, N.Y.

Circle **OV-306** on reply card, last page

Instructional Materials Centers

This folder explains, in pictures and copy, how the line of Instructional Materials Centers is being used for guidance counseling, teaching in all phases of education, portable library work, in-plant training, etc. These units enable instructors of all subjects to transform any open area into an effective classroom in minutes. Freedman Artcraft Engineering Corp., Charlevoix, Mich.

Circle **OV-307** on reply card, last page

Lighting Design Booklet

"VE-900." Concise yet thorough coverage of lighting terms, formulae and important design factors. The photometric CU tables provide an ideal guide for lighting design calculations. Includes listing of current recommended illumination levels for many applications. Sylvania Lighting Fixtures, One 48 St., Wheeling, W. Va.

Circle **OV-308** on reply card, last page

Custodial Supervisor Check-list

A check-list and recommendations on how to select a supervisor of the housekeeping department is now available. Request Engineered Maintenance Data Sheets 121 and 108. Puritan Chemical Co., 916 Ashby St., N.W., Atlanta 18, Ga.

Circle **OV-309** on reply card, last page

Circle **OV-172** on reply card, last page

SLATE IS IN STYLE AGAIN

The modern trend in chalkboards is back to natural slate.

There are several reasons for its continuing — and growing — popularity:

- **Ageless in appearance**
- **Easy to maintain**
- **Maximum service at minimum cost**
- **So easy to write on and erase**
- **Above all, has unduplicated visibility**

Write for free booklets giving authoritative information on natural slate chalkboards for your school.

PENNSYLVANIA SLATE PRODUCERS GUILD, INC.
pen argyl, pennsylvania

sponsored by producers of Pyramid and Keystone American natural slate chalkboards

Circle **OV-176** on reply card, last page

a new sound teaching advance from

MRI TRW

world's most complete line of language laboratory equipment

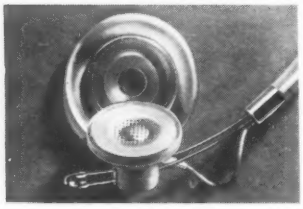
NEW A-250 high-fidelity headsets

the best of sound for sound teaching

Language laboratory and music students hear every sound, every inflection and tone . . . *total* sound for most effective learning. *The A-250 has a guaranteed frequency range of 30–20,000 cps!*

Here is unequalled comfort, too, combining a feather-light 3 ounces with a totally new sound transmission principle that eliminates the need for tight coupling to the ear.

These incomparable features make the A-250 ideal for music and speech study . . . wherever only the best sound reproduction is acceptable . . . monaural or stereo.



The A-250 is the newest addition to MRI/TRW's comprehensive line of quality, easy-to-use Language Laboratory equipment, proven in daily use in over 1000 school installations. An integral part of MRI/TRW's complete services — of major importance to teachers — is a continuing program of tested in-classroom techniques, regional seminars and local consultation, assuring maximum teaching effectiveness and utilization of equipment.

Write today for full details about MRI/TRW advanced equipment and educational services . . . and complete specifications on the new A-250 Headset.

Language Laboratory Specialists available in your area for consultation.

EDUCATIONAL ELECTRONICS DIVISION

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divisions and subsidiaries serving the educational field:
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Power Tools

"Catalog AB-60-2." A newly-revised 92-page catalog describes Delta's line of drill presses, grinders, shapers, planers, jointers, metal and wood cutting lathes, tilting arbor saws, etc. Rockwell Mfg. Co., Delta Power Tool Div., 483 N. Lexington Ave., Pittsburgh 8, Pa.

Circle **OV-310** on reply card, last page

Aluminum Curtain Wall, Window Wall Systems

Of particular interest to architects, this catalog contains assembly details and specifications of a variety of window wall and curtain wall treatments. Southern Sash Sales & Supply Co., Inc., 818 20 St., Sheffield, Ala.

Circle **OV-311** on reply card, last page

Teacher-Designed Class Record Book

Manhasset, N.Y. teachers have designed a class record book which provides an unusual number of features teachers find useful. Lies flat. Name lists fold out to eliminate re-copying. Full records for six classes of 40. Dev-Coa, 83 Clover Ave., Floral Park, N.Y.

Circle **OV-312** on reply card, last page

Audiovisual Digest

This initial 52-page paper-back edition is designed to help teachers extend their knowledge and application of A-V techniques and equipment. The digest deals with filmstrips, photographic hints and aids, tachistoscopic training, television in education, etc. $.25 a copy. Graflex, Inc., Dept. 125, 3750 Monroe Ave., Rochester, N.Y.

Circle **OV-313** on reply card, last page

Microfilming

"Microfilming Scholastic, Faculty and Educational Records." Case histories and typical applications of this equipment are given. Microfilming Corp. of America, 2 Llewellyn Ave., Hawthorne, N.J.

Circle **OV-314** on reply card, last page

Lighting

"Gems in Lighting" and "Dramatic Lighting Elegance." The unusual in lighting fixtures, many in vibrant colors for ceiling and wall mounting. A. W. Pistol, Inc., 8-10 Drake Ave., New Rochelle, N. Y.

Circle **OV-315** on reply card, last page

Athletic Products

"1960 Catalog, School Edition." Every sport need for baseball, football, boxing, basketball and a host of accessory items are shown in this comprehensive catalog. Premier Athletic Products Corp., River-Vale, N. J.

Circle **OV-316** on reply card, last page

Engineering Drawing Reproduction

The XeroX Copyflo 1824 printer automatically turns out a dry, positive engineering print up to 18″ × 24″ from a microfilm frame mounted in a data processing card. Haloid Xerox, Inc., Dept. 1824, Rochester 3, N. Y.

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Use This Reader Service Card For More Information on Products and Services

The business reply card covers products and services referred to in both advertisements and editorial reviews in this issue. The key (OV number) is found above the advertisement or following the editorial listing in the body of the magazine.

If further information concerning any of these products is desired, it will be sent without charge or obligation. Simply circle the identifying numbers on the back of the business reply card and mail it to us.

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Please ask the manufacturers, indicated by the numbers I have circled, to send further literature and information provided there is no charge or obligation.

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